

JVC

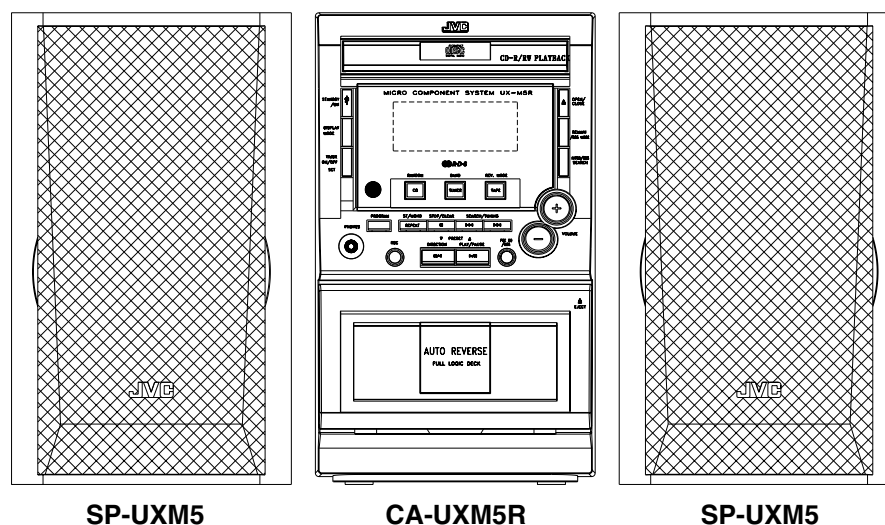
SERVICE MANUAL

MICRO COMPONENT SYSTEM

UX-M5R

Area suffix

B ----- U.K.
 E ----- Continental Europe
 EN ----- Northern Europe
 EV ----- Eastern Europe



SP-UXM5

CA-UXM5R

SP-UXM5

COMPACT
 disc
 DIGITAL AUDIO

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Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (\triangle) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

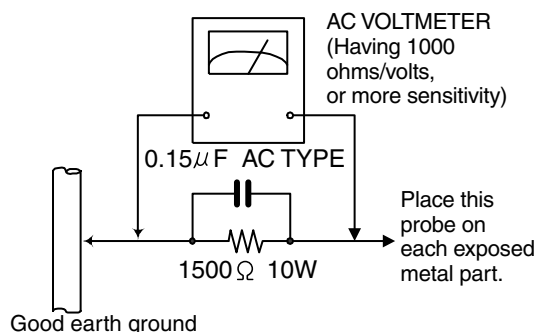
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).

- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.


CAUTION

Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (\blacksquare), diode (\blacksquare) and ICP (\bullet) or identified by the (\triangle) mark nearby are critical for safety.


(This regulation does not correspond to J and C version.)

Safety precautions (U.K only)

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by () on the Parts List and by shading on the schematics, and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics. These characteristics are often not evident from visual inspection. Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the Service Manual and may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

Warning

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 **CAUTION** Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

Preventing static electricity

1. Grounding to prevent damage by static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

2. About the earth processing for the destruction prevention by static electricity

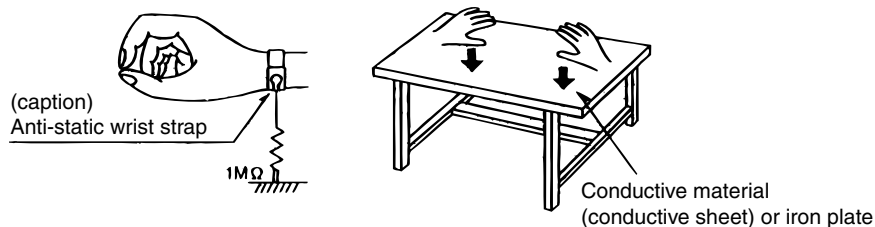
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players. Be careful to use proper grounding in the area where repairs are being performed.

2-1 Ground the workbench

Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

2-2 Ground yourself

Use an anti-static wrist strap to release any static electricity built up in your body.



3. Handling the optical pickup

1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)
2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

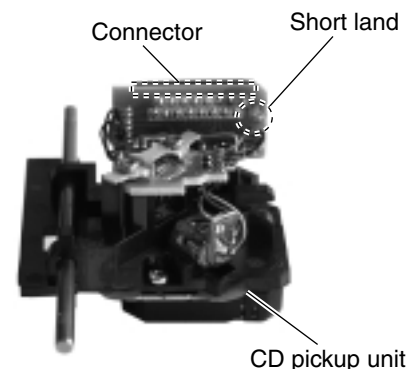
4. Handling the traverse unit (optical pickup)

1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
2. Remove solder of the short land on the card wire after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.
3. Handle the card wire carefully as it may break when subjected to strong force.
4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

5. Attention when traverse unit is decomposed

***Please refer to "Disassembly method" in the text for the CD pickup unit.**

- Apply solder to the short land before the card wire is disconnected from the connector on the CD pickup unit.
(If the card wire is disconnected without applying solder, the CD pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short land after connecting the card wire.



Important for laser products

1.CLASS 1 LASER PRODUCT

2.DANGER : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.

3.CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

4.CAUTION : The compact disc player uses invisible laserradiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.

5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



CAUTION Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.

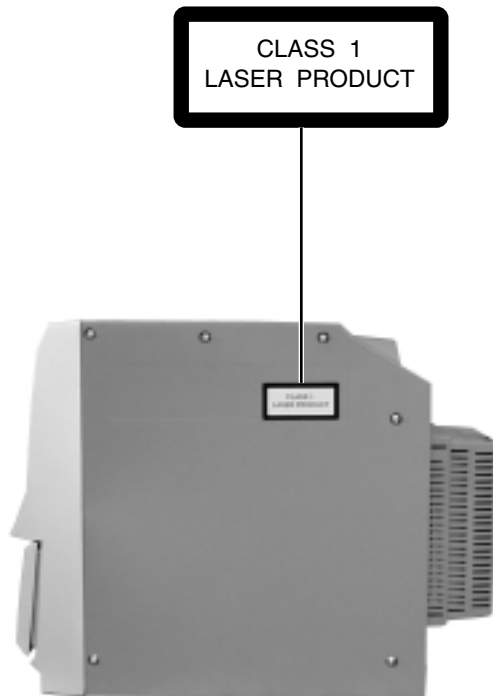
VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suoja lukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

ADVARSEL : Usynlig laserstrålning ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstrålning ved åpning,når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS



Disassembly method

<Main body section>

Replacement of the fuses and power amplifier IC

■ Replacing the fuses (See Fig. 1.)

- Remove the left side panel according to its disassembly method (see **Figs. 6** and **7**).

Fuses are located inside the left side panel.

[Caution] Be sure to replace the required fuses with designated ones.

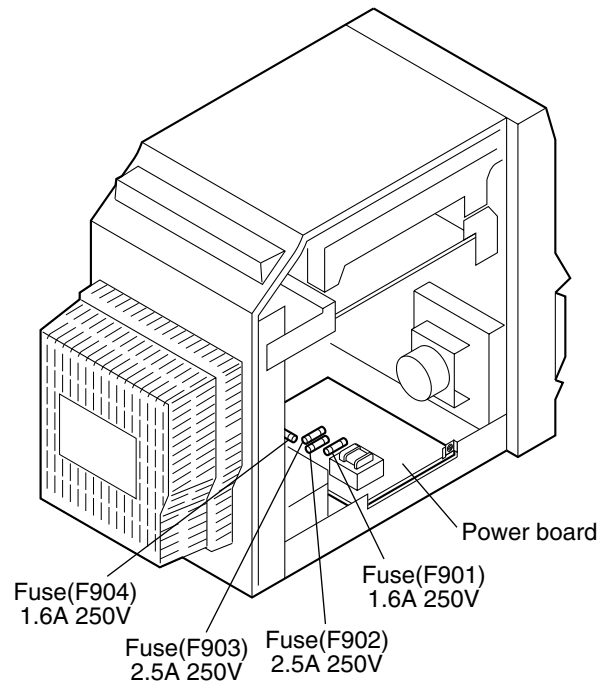


Fig.1

■ Replacing the power amplifier IC on the main board (See Fig. 2.)

- Remove the main board according to its disassembly method (see **Figs. 18** and **19**).
- From the reverse side of the main board, remove the two screws **A** retaining the bracket.
 - From the forward side of the main board, remove the four screws **B** retaining the bracket.
 - Remove the screw **C** attaching the power amplifier IC onto the heat sink.
 - In order to replace the power amplifier IC, remove the solder from soldered part **a** on the reverse side of the main board.

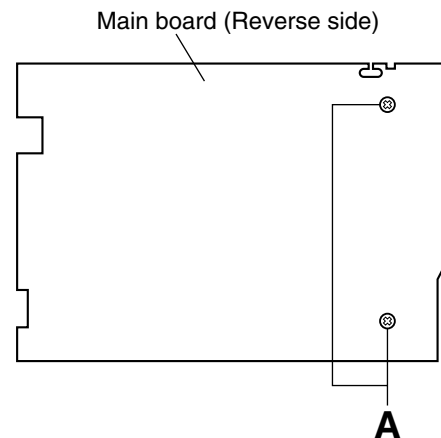


Fig.2

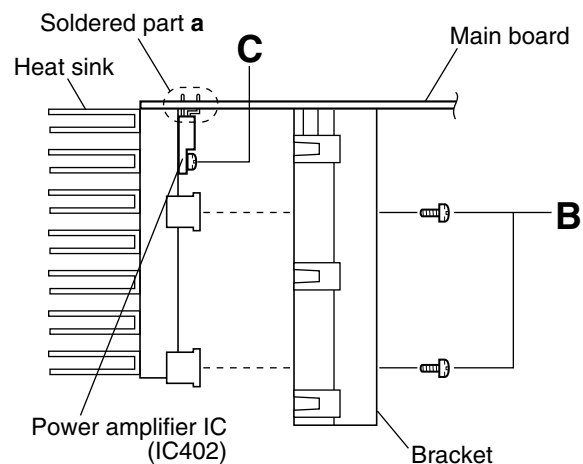


Fig.3

■ Removing the right side panel

(See Figs. 4 and 5.)

1. From the right side of the main body, remove the three screws **D** and three screws **E** retaining the right side panel.
2. Slide the right side panel toward the rear (in the direction of arrow **1**) until the claw **b** at the back of the panel is hooked by the chassis and then lift the panel upward (in the direction of arrow **2**) to remove it.

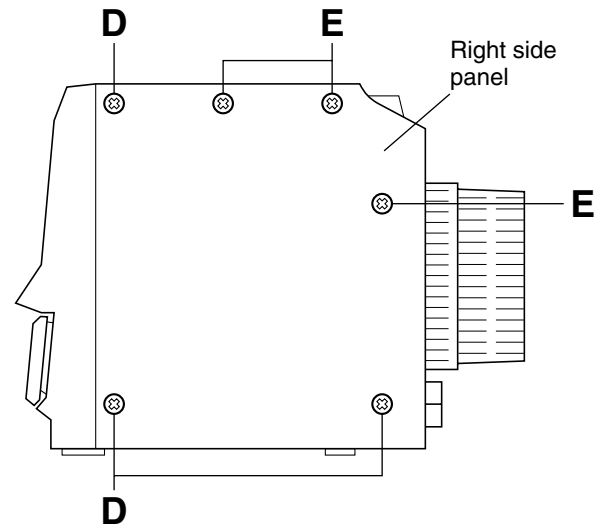


Fig.4

■ Removing the left side panel

(See Figs. 6 and 7.)

1. From the left side of the main body, remove the three screws **D** and three screws **E** retaining the left side panel.
2. Slide the left side panel toward the rear (in the direction of arrow **3**) until the claw **c** at the back of the panel is hooked by the chassis, and then lift the panel upward (in the direction of arrow **4**) to remove it.

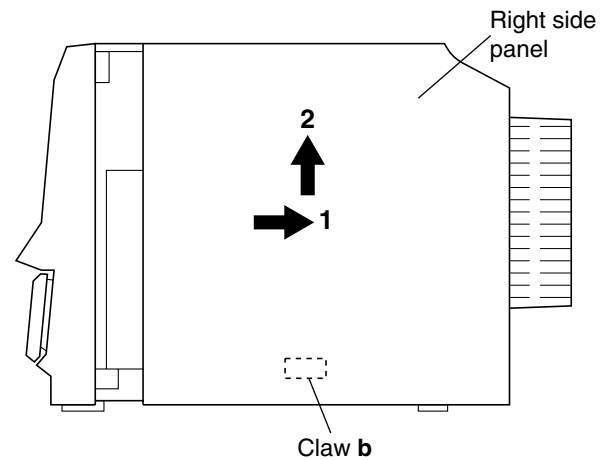


Fig.5

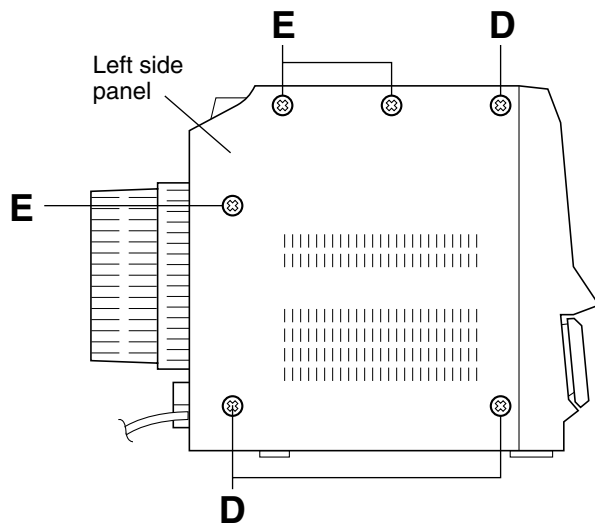


Fig.6

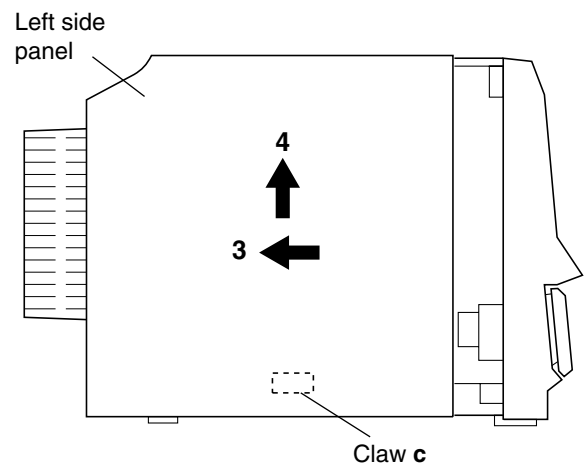


Fig.7

■ Removing the top cover

(See Figs. 8 and 9.)

- Remove the left and right side panels.
1. From the back side of the main body, loosen the two screws **F** retaining the top cover.
 2. Lift the rear part of the top cover to remove it.

■ Removing the front panel assembly

(See Figs. 10 to 12.)

- Remove the left and right side panels.
- Remove the top cover.

1. Remove the tie band bundling the wires.
2. Disconnect the wire from the connector on the cassette switch board.
3. Remove the screw **G** retaining the bracket on the earphone board.
4. Disconnect the wires from the two connectors CN607 and CN608 on the CD & MCU board.
5. Remove the four screws **H** and the two screws **J** retaining the bracket of the CD mechanism assembly from the left and right.
6. Remove the screw **K** retaining the front panel assembly from the bottom side of the main body.
7. While opening the hooks **d** to the left and right of the lower part of the front panel assembly (in the direction of arrows **1**), slide the front panel assembly toward the front (in the direction of arrow **2**).
8. Disconnect the wire from the connector on the PB/REC head board, and then remove the front panel assembly.

[Note] After assembly, apply a locking agent to the screws **G**, **H** and **J**.

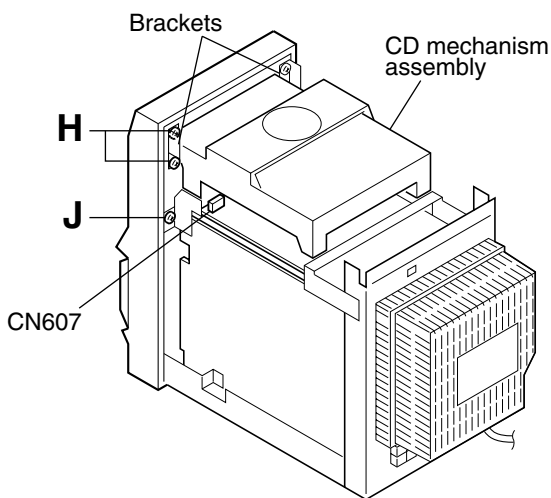


Fig.11

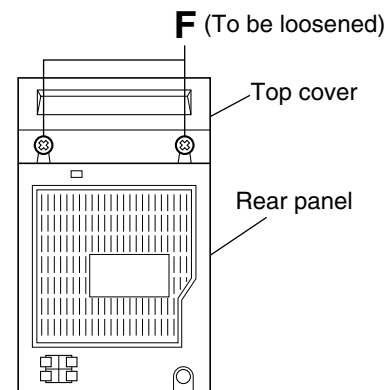


Fig.8

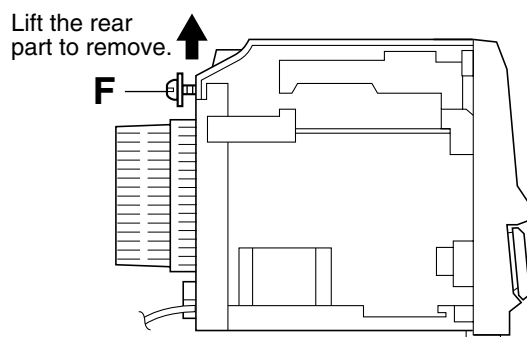


Fig.9

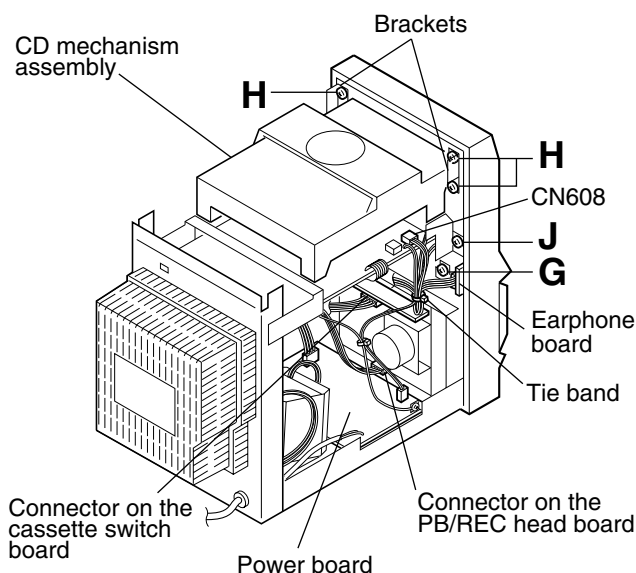


Fig.10

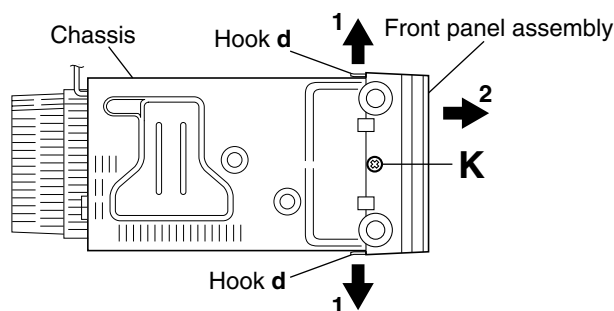


Fig.12

■ Removing the CD mechanism assembly (See Figs. 13 to 15.)

- Remove the left and right side panels.
 - Remove the top cover.
 - Remove the front panel assembly.
1. Disconnect the wires from the four connectors CN601, CN602, CN603 and CN701 on the CD & MCU board.
 2. From the left side of the main body, remove the tie bands bundling the wires.
 3. Disconnect the wire from the connector CN902 on the power board.
 4. From the left and right sides of the main body, remove the four screws **L** retaining the bracket.
 5. Slide the CD mechanism assembly toward the front and remove it from the stud of the main board.

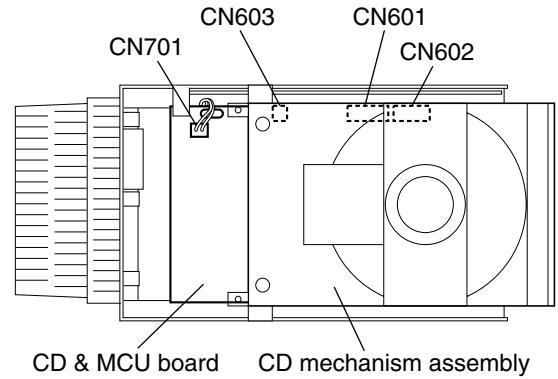


Fig.13

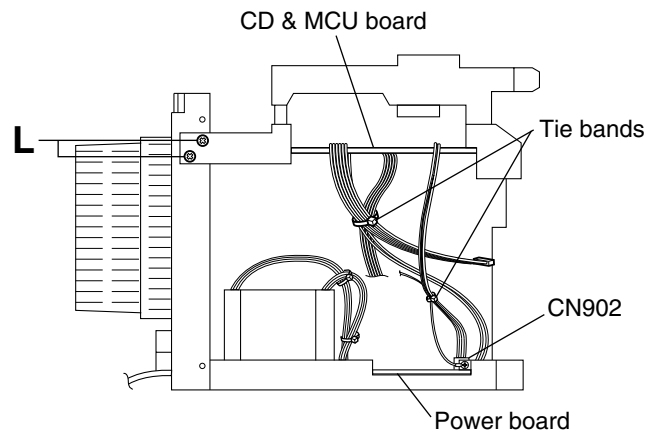


Fig.14

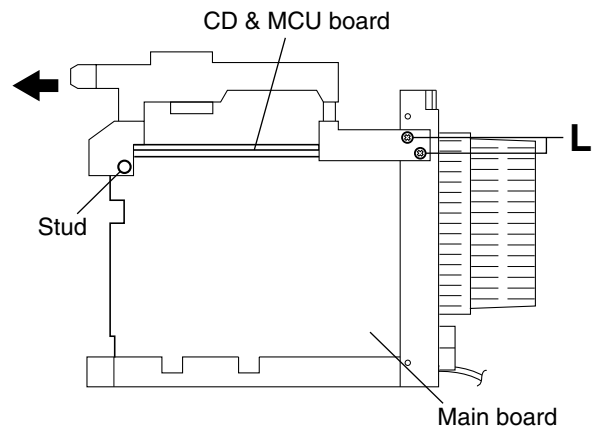


Fig.15

■ Removing the power board

(See Figs. 16 and 17.)

- Remove the left and right side panels.
1. Disconnect the wires from the connector CN901 on the power board.
 2. Remove the tie bands bundling the wires.
 3. Remove the screw **M** retaining the lug wire.
 4. Remove the two screws **N** retaining the chassis .
 5. Remove the power board by pinching the two studs retaining the power board using radio pliers, etc.

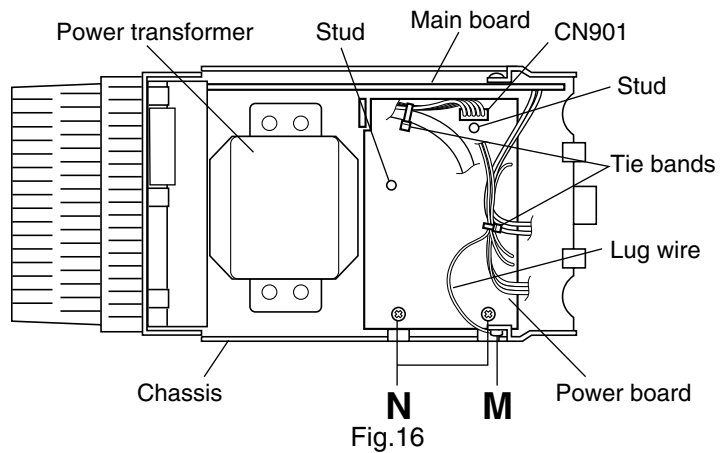


Fig.16

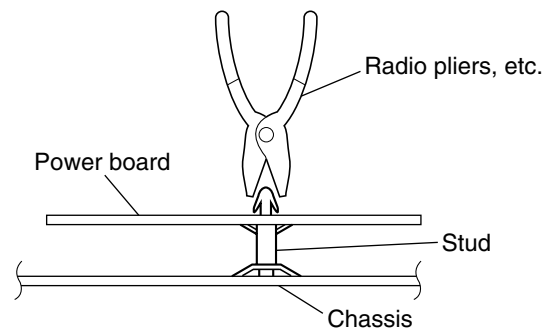


Fig.17

■ Removing the main board

(See Figs. 18 and 19.)

- Remove the left and right side panels.
 - Remove the top cover.
 - Remove the front panel assembly.
 - Remove the CD mechanism assembly.
1. From the inside of the rear panel, remove the five screws **P** retaining the bracket.
 2. Remove the two screws **Q** retaining the speaker terminal of the main board.
 3. Remove the solder from the soldered part **e** that attaches the FM antenna wire to the antenna board.
 4. Remove the three screws **R** retaining the rear panel, then remove the rear panel.
 5. From the top side of the main body, remove the screw **S** retaining the bracket of the main board.
 6. Remove the screw **T** retaining the regulator IC(IC302).
 7. Remove the tie bands bundling the wires.
 8. Disconnect the wire from the connector CN901 on the power board.
 9. Remove the stud on the main board, and then take out the main board from the chassis.

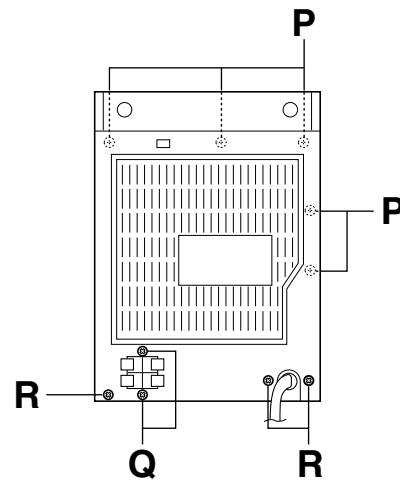


Fig.18

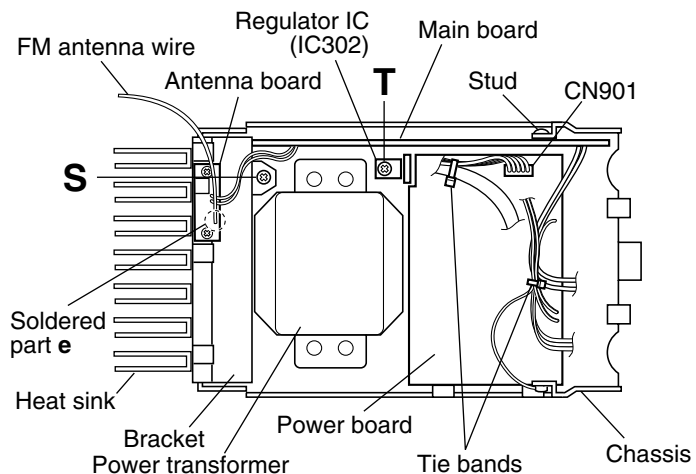


Fig.19

<Front panel assembly section>

- Remove the left and right side panels.
- Remove the top cover.
- Remove the front panel assembly.

■ Removing the key board

(See Fig. 20.)

Remove the ten screws **U** retaining the key board.

■ Removing the cassette mechanism assembly

(See Fig. 20.)

Remove the two screws **V** and the two screws **W** retaining the cassette mechanism assembly.

[Note] After assembly, apply a locking agent to the screws **V** and **W**.

■ Removing the cassette door damper

(See Fig. 20.)

Remove the screw **X** retaining the damper bracket and take out the cassette door damper.

■ Removing the cassette door stopper

(See Fig. 20.)

Remove the two screws **Y** retaining the cassette door stopper and remove the cassette door stopper.

■ Removing the cassette door cover

(See Fig. 21.)

[Note] Use the following procedure to remove only the cassette door cover. This procedure does not require the removal of exterior parts such as the side panels.

1. Open the cassette door.
2. Slide the cassette door cover in the direction of the arrow and disengage the two claws **f** and the two claws **g** on the left and right of the cassette door cover from the cassette door.

■ Removing the cassette door

(See Figs. 22 and 23.)

- Remove the cassette mechanism assembly.
- Remove the cassette door cover.

1. Open the cassette door, disengage the spring hooked across the front of the front panel assembly and the cassette door in the outward direction, and remove it from the claw **h**.
2. From the back side of the front panel assembly, remove the two screws **Z** retaining the bracket.
3. While pushing the arm section **i** of the cassette door in the direction of the arrow, remove the shaft section **j** of the cassette door from the front panel assembly.
4. While pushing the cassette door arm section **k** in the direction of the arrow, remove the shaft section **m** of the cassette door from the front panel assembly.
5. Take out the cassette door from the back side of the front panel assembly.

[Caution] In the assembly, be sure to put the spring around the shaft **j** before attaching the cassette door.

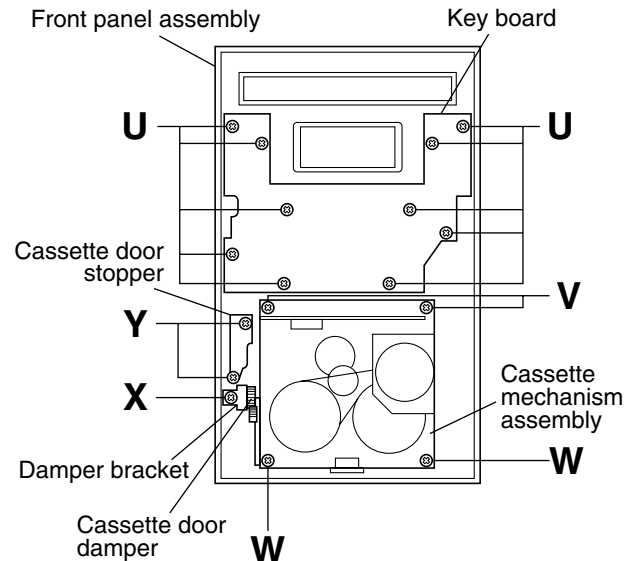


Fig.20

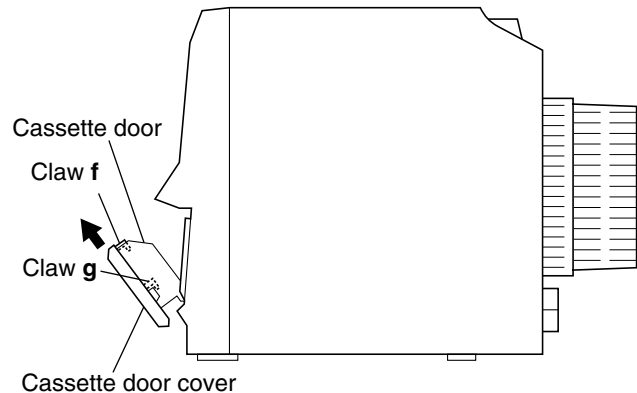


Fig.21

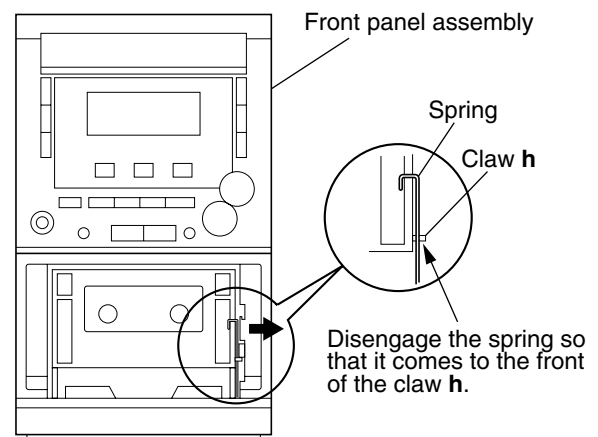


Fig.22

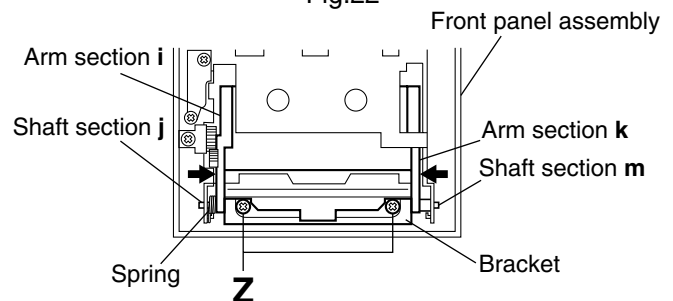


Fig.23

<CD mechanism section>

- Remove the left and right side panels.
- Remove the top cover.
- Remove the front panel assembly.
- Remove the CD mechanism assembly.

■ Removing the CD & MCU board

(See Figs. 1 and 2.)

- From the back side of the CD mechanism assembly, remove the two screws **A** retaining the CD & MCU board.
- Disengage the two studs retaining the CD & MCU board.
- Disconnect the wires from the two connectors CN702 and CN703 on the CD & MCU board.
- Lift the CD & MCU board and attach solder to the short land part **a** on the CD pickup assembly.
- Disconnect the card wire from the connector CN704 on the CD & MCU board, and take out the CD & MCU board.

[Caution] • Be sure to solder the short land part **a** on the CD pickup unit before disconnecting the card wire from the CD pickup assembly (see Fig. 2). If the card wire is disconnected without attaching solder, the CD pickup may be destroyed by static electricity.

- In the assembly, be sure to remove solder from the short land part **a** after connecting the card wire.

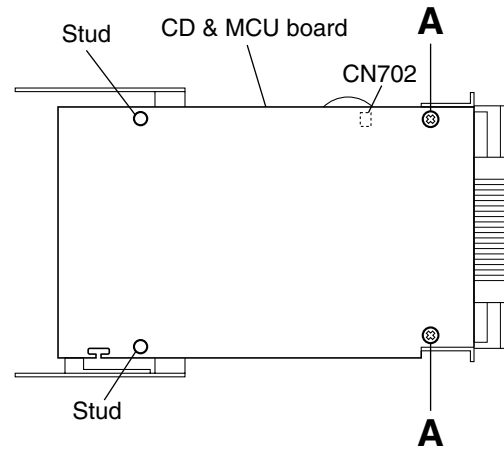


Fig.1

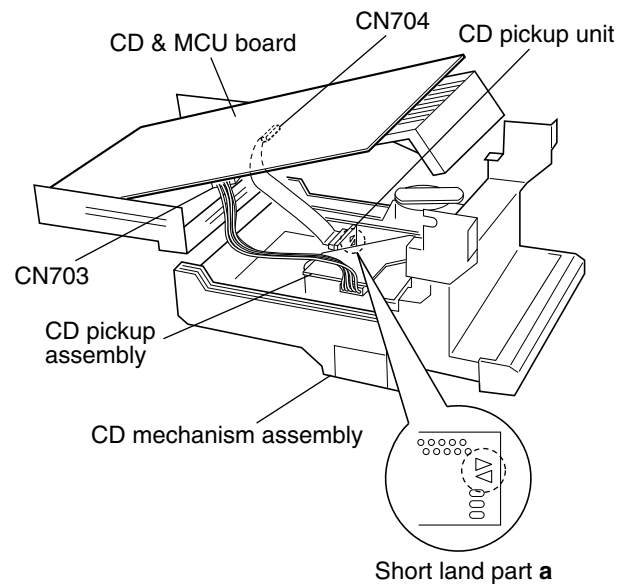


Fig.2

■ Removing the CD pickup assembly

(See Fig. 3.)

- Remove the CD & MCU board.
- From the back side of the CD mechanism assembly, remove the four screws **B** retaining the CD pickup assembly.
 - Take out the CD pickup assembly.

[Note] When removing or replacing the dampers, note their colors and be sure to attach them in their correct positions.

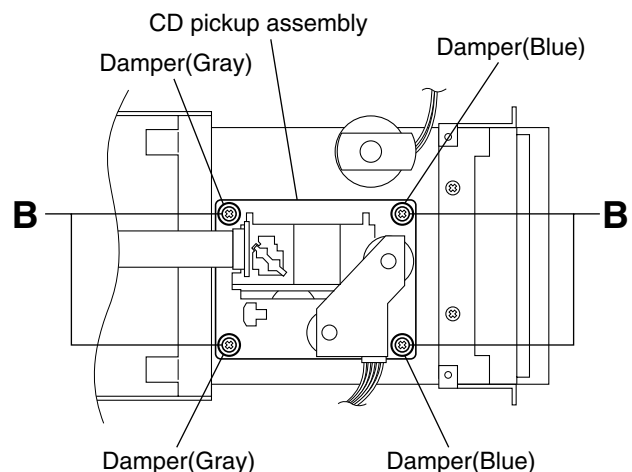


Fig.3

■ Removing the tray motor

(See Figs. 4 to 7.)

- Remove the CD & MCU board.
1. On the top of the CD mechanism assembly, open up the claws **b** and **c** at the left and right of the clamber assembly and lift the assembly to remove it.
 2. On the top of the CD mechanism assembly, push the section **d** of the elevator in the direction of the arrow and lower the CD pickup assembly.
 3. Pull out the tray.
 4. While opening up the claws **e** at the left and right of the tray in the directions of the arrows, remove the tray.
 5. While pushing the claw **f** on the CD mechanism assembly downwards, slide the elevator fully in the direction of the arrow.
 6. Remove the transparent cover.
 7. Remove the belt from the tray motor pulley.
 8. Remove the two screws **C** retaining the tray motor and remove it.

[Note] • Take care not to attach grease on the belt.
 • After attaching the tray motor in the assembly, apply a locking agent to the screws **C**.

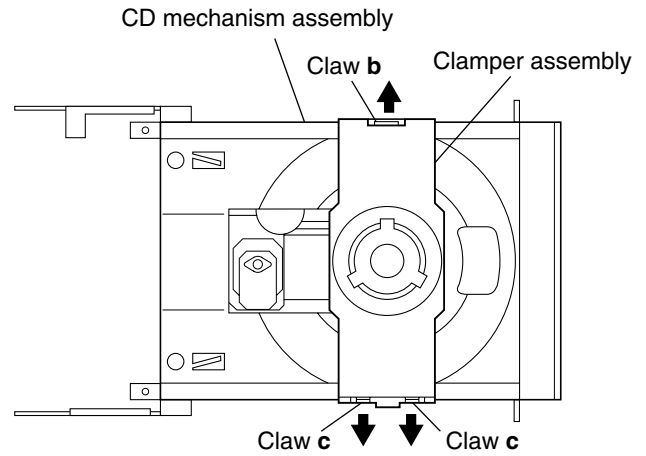


Fig.4

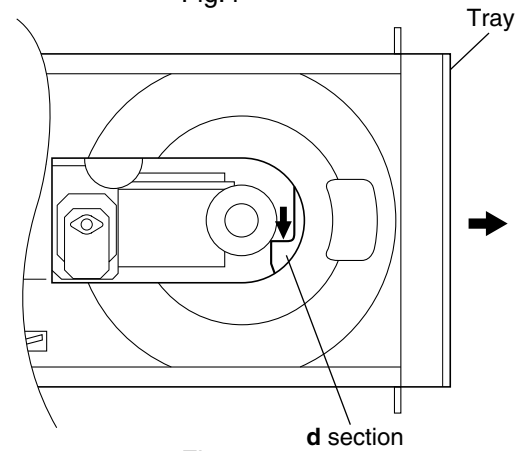


Fig.5

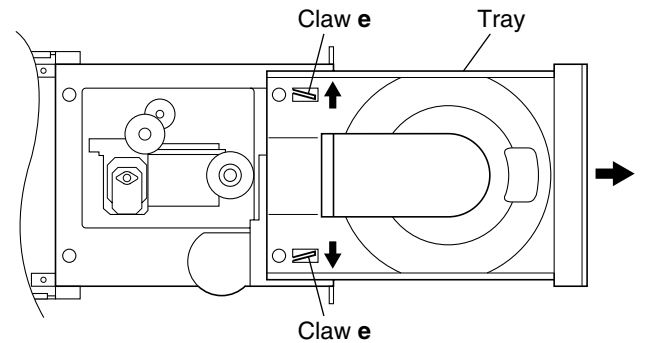


Fig.6

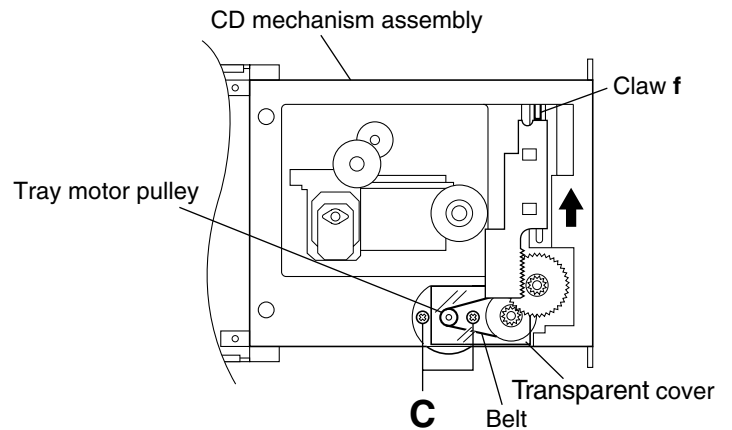


Fig.7

■ Replacing the CD pickup unit (See Figs. 8 to 11.)

[Note] Use the following procedure to replace only the CD pickup unit.

1. Remove the left and right side panels (see **Figs.4** to **7** of "Main body section" on page 1-7).
2. Remove the top cover (see **Figs.8** and **9** "Main body section" on page 1-8).
3. On the top of the main body, open up the claws **b** and **c** on the left and right of the clamber assembly in the direction of the arrows and lift the assembly to remove it.
4. On the top of the main body, push section **d** on the elevator of the CD mechanism assembly and lower the CD pickup assembly.
5. Pull out the tray.
6. Remove the slit washer retaining the feed middle gear, and take out the feed middle gear.
7. Remove the two screws **D** retaining the shaft.
8. Turn the CD pickup unit upside down and apply solder to the short land part **a**.
9. Disconnect the card wire from the CD pickup unit and replace the unit.

[Caution] • Be sure to solder the short land part **a** on the CD pickup unit before disconnecting the card wire from the CD pickup unit (see Fig. 11).
If the card wire is disconnected without attaching solder, the CD pickup may be destroyed by static electricity.

- In the assembly, be sure to remove solder from the short land part **a** after connecting the card wire.

[Note] • Removing the CD pickup unit involves the removal of the sliding spring. In the assembly, be sure to attach the spring in the correct orientation before attaching the CD pickup unit (see Fig. 11).

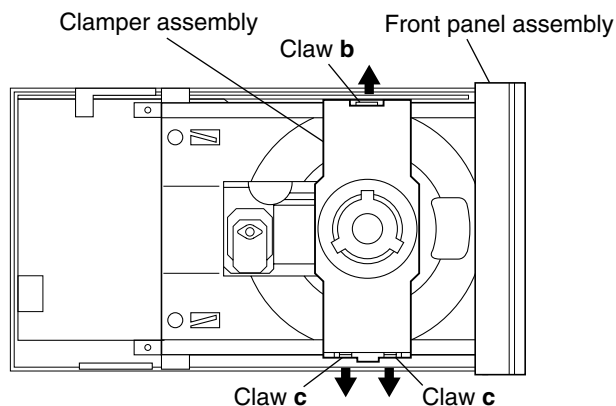


Fig. 8

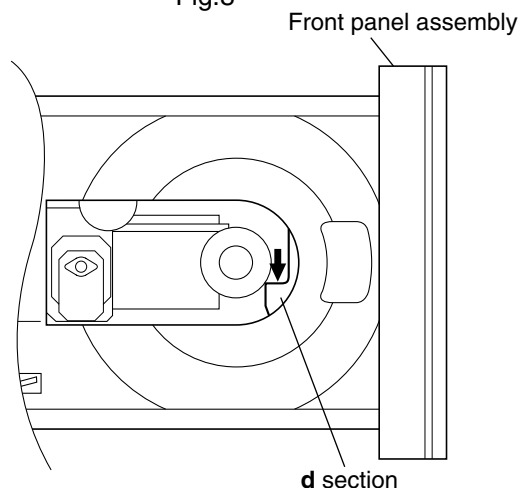


Fig. 9

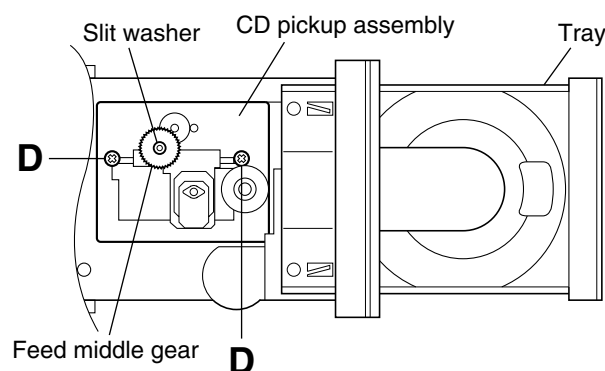


Fig. 10

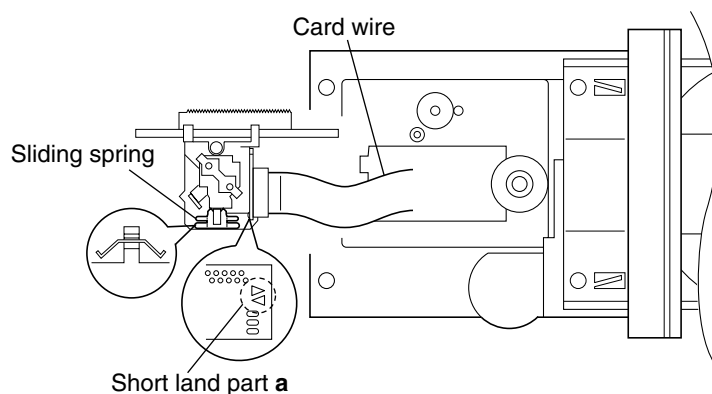


Fig. 11

Adjustment method

■ Measuring instructions required for adjustment

1. AM signal generator
2. FM signal generator
3. Intermediate frequency sweep generator
4. FM stereo signal generator
5. Low-frequency oscillator
(oscillation frequency 50Hz-20kHz, 0dB output with 600 ohm impedance)
6. Attenuator (600 ohm impedance)
7. Electronic voltmeter
8. Distortion meter
9. Torque gauge (cassette for CTG-N)
10. Wow & flutter meter
11. Frequency counter meter
12. Test tape
VT712 : For tape speed and wow flutter
VT724 : For reference level
VT702 : For playback frequency
VT702 : For head azimuth adjustment
13. Blank tape
TAPE I : AC-225

■ Measurement conditions

Power supply voltage
AC230V/50Hz

■ Measuring instruments

Radio section

FM 1kHz, 22.5kHz deviation
FM STEREO : 1kHz, 67.5kHz deviation
pilot signal 7.5kHz
AM : 1kHz, 30% modulation
Reference output :
H.phone output -10dBs(0.245V) 32 ohm
Speaker output 0dBs(2.8V) 8 ohm

Cassette amplifier section

Reference output :
H.phone output -10dBs(0.245V) 32 ohm
Speaker output 0dBs(2.8V) 8 ohm
Standard mode of function knob :
Press TAPE knob of select TAPE mode

CD section

CD test disc : CTS-1000

■ Cassette amplifier section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
Head azimuth adjustment	<ul style="list-style-type: none"> Test tape: VT702 (8kHz) Signal output terminal: H.phone out (with 32 ohm load) 	<ol style="list-style-type: none"> 1.Play back the test tape VT702 (8kHz). 2.Adjust the head azimuth adjusting screw so that the phase difference between the R and L channels is minimized at an output level that is within $\pm 2\text{dB}$ of the maximum output level. After this adjustment, lock the head azimuth adjusting screw with screw sealant to cover more than a half of the screw head. 3.When the head azimuth is maladjusted, correct it with the head azimuth adjusting screw. 	<ul style="list-style-type: none"> Output level: Within $\pm 2\text{dB}$ of maximum output level Phase difference R and L channels: Minimum 	Head azimuth adjusting screw (To be used only after head replacement) See Fig.1 on page 1-17.
Tape speed and wow/flutter check and adjustment	<ul style="list-style-type: none"> Test tape: VT712 (3kHz) Signal output terminal: H.phone out (with 32 ohm load) 	<ol style="list-style-type: none"> 1.Play back the test tape VT712 (3kHz) by the end portion. 2.Connect a frequency counter and check that it reads between 2940 and 3090Hz. If not, adjust the frequency with the motor semifixed resistor. 3.Check that the wow/flutter is within 0.38% (unweighted). 	<ul style="list-style-type: none"> 2940 to 3090Hz Within 0.38% (unweighted) 	<ul style="list-style-type: none"> Tape speed: Motor semifixed resistor See Fig.2 on page 1-17. Check only
PB frequency response check	<ul style="list-style-type: none"> Test tape: VT702 Signal output terminal: H.phone out (with 32 ohm load) 	Play back the test tape VT702 while con-firming that deviation between the 1kHz signal and 8kHz signal should be (0+3dB-6dB).	Deviation between 1kHz and 8kHz: (0+3dB-6dB)	
Bias frequency check	<ul style="list-style-type: none"> Tape: Normal Signal output terminal: Cassette REC./PLAY HEAD 	Set the TUNER or CD function and with TAPE to record. Check to see if the frequency at the measuring point P201 is 67kHz $\pm 1\text{kHz}$ if not adjust L203 until the frequency counter indicates 67 kHz $\pm 1\text{kHz}$.		L203, P201 See Fig.3 on page 1-17.
REC and PB frequency response adjustment	<ul style="list-style-type: none"> Test tape: AC225 Signal input: SG 1kHz -20dBs with emphasis Signal output terminal: H.phone out (with 32 ohm load) 	At TUNER, set the BAND to the FM position, and record the reference 1kHz signal and 8kHz signal alternately repeatedly. While playing back the recorded signal of the 1kHz signal differ from that of the 8kHz signal by within (0+3dB-6dB).	Level difference for 1kHz signal: Within (0+3dB-6dB)	

■ Tuner section

Item	Measuring condition	Check and adjustment procedure	Standard value	Adjusting part
AM IF adjustment	<ul style="list-style-type: none"> Signal input: Loop antenna Signal output: IC101 pin19 	<ol style="list-style-type: none"> 1.Set the intermediate frequency sweep generator to AM 450kHz. 2.Adjust T101 for maximum and center output. 		T101 See Fig.3 on page 1-17.
AM tracking adjustment	<ul style="list-style-type: none"> Signal input: Loop antenna Signal output: H.phone out (with 32 ohm load) 	<ol style="list-style-type: none"> 1.Set the TUNER at 522kHz adjust L101 until the test point P107 voltage at $1.1\text{V} \pm 0.1\text{V}$. 2.Set the TUNER at 1629kHz, check the test point P107 voltage at $7.0\text{V} \pm 0.3\text{V}$. 3.Set the TUNER and S/G at 603kHz, adjust L102 for maximum output. 4.Set the TUNER and S/G at 1404kHz, adjust the TC101 for maximum output. 5.Repeat the above steps 3 and 4. 		L101, P107 L102 TC101 See Fig.3 on page 1-17.
FM tracking adjustment	<ul style="list-style-type: none"> Signal input: Dummy antenna FM ANT FM GND Signal output: H.phone out (with 32 ohm load) 	<ol style="list-style-type: none"> 1.Set the TUNER at 87.5MHz adjust the L104 until the test point P105 voltage at $2.3\text{V} \pm 0.1\text{V}$. 2.Set the TUNER at 108MHz, check the test point P105 voltage at $6.5\text{V} \pm 0.3\text{V}$. 3.Set the TUNER and S/G at 90.1MHz, adjust L103 for maximum output. 4.Set the TUNER and S/G at 106.1MHz, adjust the TC102 for maximum output. 5.Repeat the above steps 3 and 4. 		L104, P105 L103 TC102 See Fig.3 on page 1-17.

■ Location of adjusting parts

• Cassette mechanism section

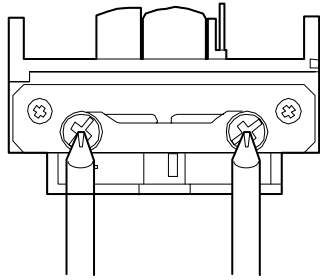


Fig.1 Head azimuth adjustment

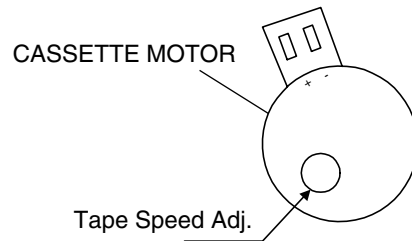


Fig.2

• Main board (Forward side)

Note: Measuring points (P105, P107 and P201) are located on the reverse side.

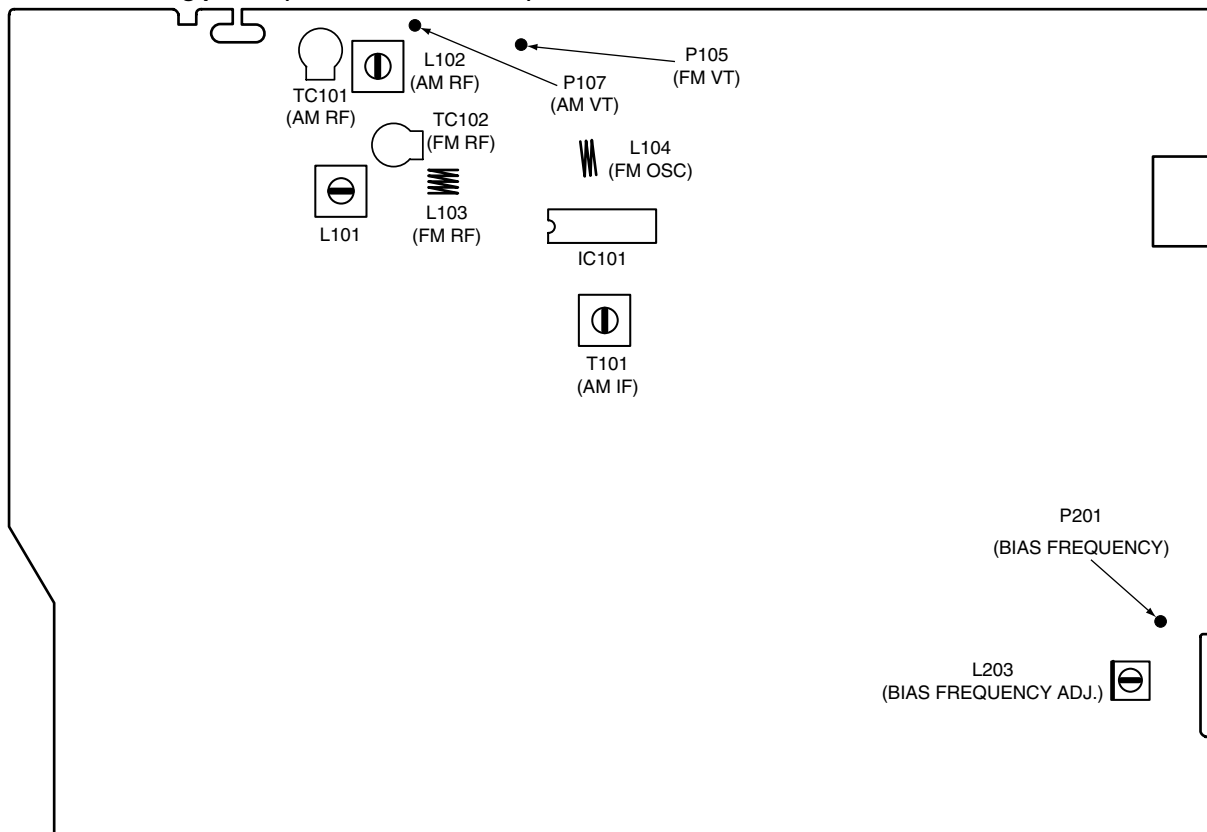
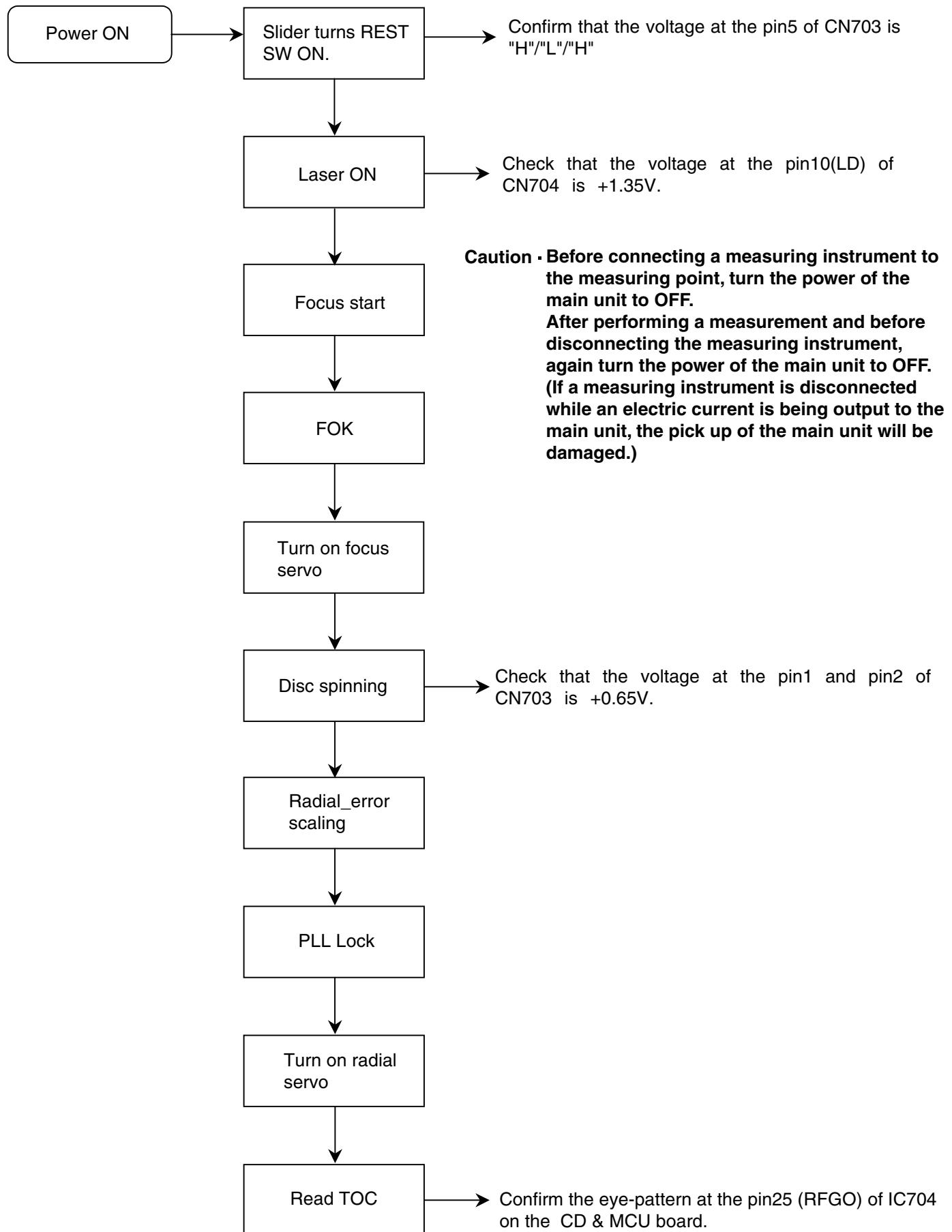


Fig.3

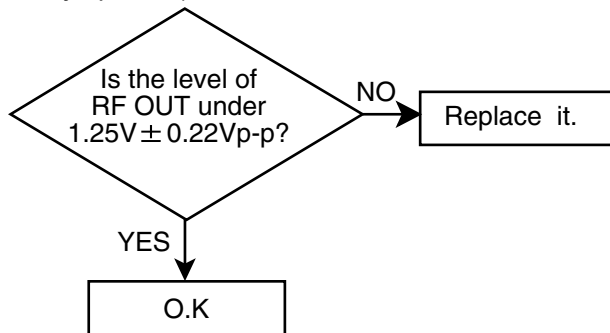
Flow of functional operation until TOC read



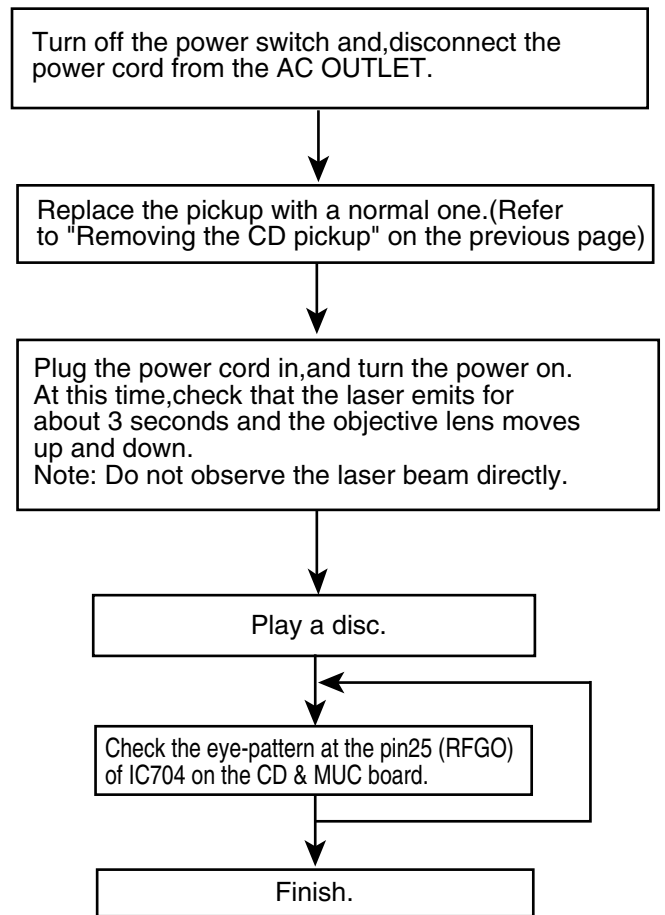
Maintenance of laser pickup

- (1) Cleaning the pick up lens
Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.
- (2) Life of the laser diode
When the life of the laser diode has expired, the following symptoms will appear.

The level of RF output (EFM output: amplitude of eye pattern) will below.



Replacement of laser pickup



- (3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.

Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

If the laser power is lower than the specified value,the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor would be adjusted when the pickup operates normally,the laser pickup may be damaged due to excessive current.

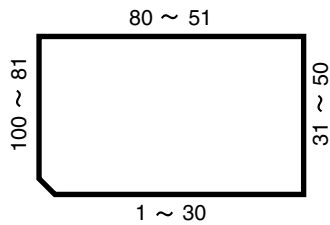
Trouble shooting

Circuit	Symptom	Cause	Remedy
General	No sound	<ul style="list-style-type: none"> Speakers are not connected. Wrong function is selected. Defective volume control Defective earphone jack Defect in IC402 Defect in IC301 	<p>Check the speaker connection.</p> <p>Set switch to the proper position.</p> <p>Set the volume control to a proper sound level.</p> <p>Replace the earphone jack.</p> <p>Check voltages. Replace if necessary.</p> <p>Check voltages. Replace if necessary.</p>
AM	No sound, weak sound (Low sensitivity)	<ul style="list-style-type: none"> Improper location of unit Defect in IF T101 Defect AM antenna coil L102 or oscilloscope coil L101 Intermediate frequency tuning faulty RF tracking faulty Defective IC101 Defective IC102 Poor contact in antenna circuit 	<p>Rotate or reposition the unit.</p> <p>Check resistance, voltage, and current. Replace as needed.</p> <p>Replace if necessary.</p> <p>Readjust (see "Adjustment method").</p> <p>Readjust (see "Adjustment method").</p> <p>Check voltages. Replace if necessary.</p> <p>Check voltages. Replace if necessary.</p> <p>Check resistance and resolder.</p>
FM	No sound, weak sound (Low sensitivity)	<ul style="list-style-type: none"> FM antenna not connected Defective band selector switch Defective IC101 Defective IC102 Intermediate frequency tuning faulty Poor contact in FM antenna circuit 	<p>Connect the built-in or external antenna.</p> <p>Replace or repair the switch.</p> <p>Check voltages. Replace if necessary.</p> <p>Check voltages. Replace if necessary.</p> <p>Readjust (see "Adjustment method").</p> <p>Resolder or repair as required.</p>
Tape	No sound/recording, unsteady tape sound, weak sound	<ul style="list-style-type: none"> Dirty capstan or head Irregular cassette tape winding Defective IC201 Defective IC202 Cassette erasure prevention tabs broken out 	<p>Clean the capstan or head with alcohol.</p> <p>Replace tape.</p> <p>Check voltages. Replace if necessary.</p> <p>Check voltages. Replace if necessary.</p> <p>Replace tape or cover tab openings with adhesive tape.</p>
CD	Cannot read the table of content. No sound	<ul style="list-style-type: none"> Disc is inserted upside down. Disc is dirty. Disc is scratched. Disc is seriously warped. A non-standard disc has been inserted. Moisture has formed inside the CD deck. Defective IC701 Defective IC704 Defective IC703 Defect in the CD pickup mechanism 	<p>Insert disc correctly.</p> <p>Wipe clean with a soft cloth.</p> <p>Use a new disc.</p> <p>Use a new disc.</p> <p>Use only a brand name disc.</p> <p>Wait about 20 to 30 minutes.</p> <p>Check voltages. Replace if necessary.</p> <p>Check voltages. Replace if necessary.</p> <p>Check voltages. Replace if necessary.</p> <p>Replace as required.</p>

Description of major ICs

■ TC9462F (IC701) : Digital servo single chip processor

1. Terminal layout



2. Pin function

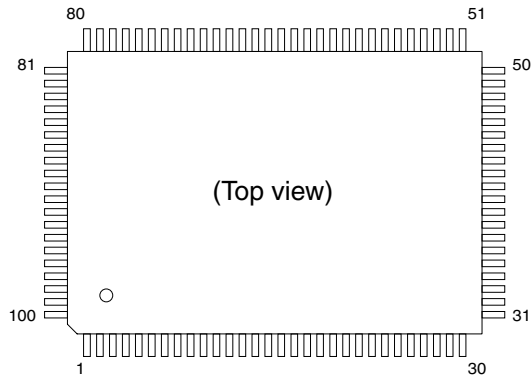
Pin No.	Symbol	I/O	Function															
1	TEST0	I	Test mode terminal. Normally, keep at open.															
2	HSO	O	Playback speed mode flag output terminal. <table><tr><td>UHSO</td><td>HSO</td><td>PLAYBACK SPEED</td></tr><tr><td>H</td><td>H</td><td>Normal</td></tr><tr><td>H</td><td>L</td><td>2 times</td></tr><tr><td>L</td><td>H</td><td>4 times</td></tr><tr><td>L</td><td>L</td><td>-</td></tr></table>	UHSO	HSO	PLAYBACK SPEED	H	H	Normal	H	L	2 times	L	H	4 times	L	L	-
UHSO	HSO	PLAYBACK SPEED																
H	H	Normal																
H	L	2 times																
L	H	4 times																
L	L	-																
3	UHSO	O																
4	EMPH	O	Subcode Q data emphasis flag output terminal. Emphasis ON at "H" level and OFF at "L" level. The output polarity can invert by command.															
5	LRCK	O	Channel clock output terminal. (44.1kHz) L-ch at "L" level and R-ch at "H" level. The output polarity can invert by command.															
6	VSS1	-	Digital ground terminal.															
7	BCK	O	Bit clock output terminal. (1.4112MHz)															
8	AOUT	O	Audio data output terminal.															
9	DOUT	O	Digital data output terminal.															
10	MBOV	O	Buffer memory over signal output terminal. Over at "H" level.															
11	IPF	O	Correction flag output terminal. At "H" level, AOUT output is made to correction impossibility by C2 correction processing.															
12	SBOK	O	Subcode Q data CRCC check adjusting result output terminal. The adjusting result is OK at "H" level.															
13	CLCK	I/O	Subcode P~W data readout clock input/output terminal. This terminal can select by command bit.															
14	VDD1	-	Digital power supply voltage terminal.															
15	VSS2	-	Digital ground terminal.															
16	DATA	O	Subcode P~W data output terminal.															
17	SFSY	O	Playback frame sync signal output terminal.															
18	SBSY	O	Subcode block sync signal output terminal.															
19	SPCK	O	Processor status signal readout clock output terminal.															
20	SPDA	O	Processor status signal output terminal.															
21	COFS	O	Correction frame clock output terminal. (7.35kHz)															
22	MONIT	O	Internal signal (DSP internal flag and PLL clock) output terminal. Selected by command. This terminal output the text data with serial by command.															
23	VDD2	-	Digital power supply voltage terminal.															
24	TESIO0	I	Test input/output terminal. Normally, keep at "L" level. The terminal that inputted the clock for read of text data by command.															
25	P2VREF	-	PLL double reference voltage supply terminal.															
26	HSSW	O	2/4 times speed at "VREF" voltage.															
27	ZDET	O	1 bit DA converter zero detect flag output terminal.															
28	PDO	O	Phase difference signal output terminal of EFM signal and PLCK signal.															

Pin No.	Symbol	I/O	Function								
29	TMAXS	O	TMAX detection result output terminal. Selected by command bit (TMPS).								
30	TMAX	O	TMAX detection result output terminal. Selected by command bit (TMPS). <table><tr><td>DIFFERENCE RESULT</td><td>TMAX OUTPUT</td></tr><tr><td>Longer than fixed freq.</td><td>"P2VREF"</td></tr><tr><td>Shorter than fixed freq.</td><td>"Vss"</td></tr><tr><td>Within the fixed freq.</td><td>"HiZ"</td></tr></table>	DIFFERENCE RESULT	TMAX OUTPUT	Longer than fixed freq.	"P2VREF"	Shorter than fixed freq.	"Vss"	Within the fixed freq.	"HiZ"
DIFFERENCE RESULT	TMAX OUTPUT										
Longer than fixed freq.	"P2VREF"										
Shorter than fixed freq.	"Vss"										
Within the fixed freq.	"HiZ"										
31	LPFN	I	LPF amplifier inverting input terminal for PLL.								
32	LPFO	O	LPF amplifier output terminal for PLL.								
33	PVREF	-	PLL reference voltage supply terminal.								
34	VCOREF	I	VCO center frequency reference level terminal. Normally, keep at "PVREF" level.								
35	VCOF	O	VCO filter terminal.								
36	AVSS1	-	Analog ground terminal.								
37	SLCO	O	Data slice level output terminal.								
38	RFI	I	RF signal input terminal.								
39	AVDD1	-	Analog power supply voltage terminal.								
40	RFCT	I	RFRP signal center level input terminal.								
41	RFZI	I	RFRP zero cross input terminal.								
42	RFRP	I	RF ripple signal input terminal.								
43	FEI	I	Focus error signal input terminal.								
44	SBAD	I	Sub-beam adder signal input terminal.								
45	TSIN	I	Test input terminal. Normally, keep at "VREF" level.								
46	TEI	I	Tracking error signal input terminal. Take in at tracking servo on.								
47	TEZI	I	Tracking error zero cross input terminal.								
48	FOO	O	Focus servo equalizer output terminal.								
49	TRO	O	Tracking servo equalizer output terminal.								
50	VREF	-	Analog reference voltage supply terminal.								
51	RFGC	O	RF amplitude adjustment control signal output terminal.								
52	TEBC	O	Tracking balance control signal output terminal.								
53	FMO	O	Feed equalizer output terminal.								
54	FVO	O	Speed error signal or feed search equalizer output terminal.								
55	DMO	O	Disk equalizer output terminal. (PWM carrier=88.2kHz for DSP, Synchronize to PXO)								
56	2VREF	-	Analog double reference voltage supply terminal.								
57	SEL	O	APC circuit ON/OFF indication signal output terminal. At the laser on time, UHF = L at "HiZ" level and UHF = H at "H" level.								
58	FLGA	O	External flag output terminal for internal signal. Can select signal from TEZC, $\overline{\text{FOON}}$, $\overline{\text{FOK}}$ and RFZC by command.								
59	FLGB	O	External flag output terminal for internal signal. Can select signal from $\overline{\text{DFCT}}$, $\overline{\text{FOON}}$, $\overline{\text{FMON}}$ and RFZC by command.								
60	FLGC	O	External flag output terminal for internal signal. Can select signal from $\overline{\text{TRON}}$, TRSR, FOK and $\overline{\text{SRCH}}$ by command.								
61	FLGD	O	External flag output terminal for internal signal. Can select signal from $\overline{\text{TRON}}$, $\overline{\text{DMON}}$, $\overline{\text{HYS}}$ and $\overline{\text{SHC}}$ by command.								
62	VDD3	-	Digital power supply voltage terminal.								
63	VSS3	-	Digital ground terminal.								
64	IO0	I/O	General I/O terminal. Can change over input port or output port by command.								
65	IO1	I/O	At the input mode time can readout a state of terminal (H/L) by read command.								
66	IO2	I/O	At the output mode time can control a state of terminal (H/L/HiZ) by command.								
67	IO3	I/O									

Pin No.	Symbol	I/O	Function
68	$\overline{\text{DMOUT}}$	I	This terminal controls IO0~IO3 terminal. At "L" level time, IO0, 1 out feed equalizer signal of 2-state PWM, IO2,3 out disk equalizer signal of 2-state PWM.
69	$\overline{\text{CKSE}}$	I	Normally, keep at open.
70	$\overline{\text{DACT}}$	I	DAC test mode terminal. Normally, keep at open.
71	TESIN	I	Test input terminal. Normally, keep at "L" level.
72	TESIO1	I	Test input/output terminal. Normally, keep at "L" level.
73	VSS4	-	Digital ground terminal.
74	PXI	I	Crystal oscillator connecting input terminal for DSP. Normally, keep at "L" level.
75	PXO	O	Crystal oscillator connecting output terminal for DSP.
76	VDD4	-	Digital power supply voltage terminal.
77	XVSS	-	Oscillator ground terminal for system clock.
78	XI	I	Crystal oscillator connecting input terminal for system clock.
79	XO	O	Crystal oscillator connecting output terminal for system clock.
80	XVDD	-	Oscillator power supply voltage terminal for system clock.
81	DVSR	-	Analog ground terminal for DA converter.(R-ch)
82	RO	O	R channel data forward output terminal.
83	DVDD	-	Analog supply voltage terminal for DA converter.
84	DVR	-	Reference voltage terminal for DA converter.
85	LO	O	L channel data forward output terminal.
86	DVSL	-	Analog ground terminal for DA converter.(L-ch)
87	TEST1	I	Test mode terminal. Normal, keep at open.
88	TEST2	I	Test mode terminal. Normal, keep at open.
89	TEST3	I	Test mode terminal. Normal, keep at open.
90	BUS0	I/O	Micon interface data input/output terminal.
91	BUS1	I/O	
92	BUS2	I/O	
93	BUS3	I/O	
94	VDD5	-	Digital power supply voltage terminal.
95	VSS5	-	Digital ground terminal.
96	BUCK	I	Micon interface clock input terminal.
97	$\overline{\text{CCE}}$	I	Command and data sending/receiving chip enable signal input terminal. The bus line becomes active at "L" level.
98	TEST4	I	Test mode terminal. Normal, keep at open.
99	$\overline{\text{TSMOD}}$	I	Local test mode selection terminal.
100	$\overline{\text{RST}}$	I	Reset signal input terminal. Reset at "L" level.

■ TMP87EP26F (IC601) : MCU

1. Terminal layout



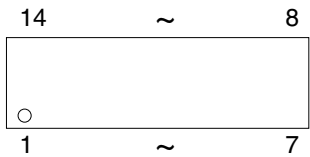
2.Pin function

Pin No.	Symbol	I/O	Function
1	VSS	-	GND (0V)
2	XOUT	O	Resonator connecting pins for high clock(4-8MHz).
3	XIN	I	For inputting external clock, XIN is used and XOUT is opened.
4	RESET	I/O	Reset signal input or watchdog timer output/address-trap-reset output
5	XTOUT(P22)	I/O	Resonator connecting pins for slow clock(32.768kHz)
6	XTIN(P21)	I/O	or general purpose I/O.
7	TEST	I	Test pin for out-going test. Always fixed to low.
8	SHIFT FREQ	O	Shift the crystal oscillation frequency to reduce tuner noise.
9	REMOTE	I	Remote control signal input
10	MUTE	O	Audio mute output
11	PLAY MUTE	O	Muting output during play
12	REC MUTE	O	Muting output during recording
13	PLAY/REC	O	Play or recording output, low for recording.
14	NC(SCK2)	-	Not connect
15	NC(SI2)	-	Not connect
16	NC(SO2)	-	Not connect
17	REC SW (RVS)/(WAIT)	I	Deck reverse record protection input. Low means can record on reverse side.
18	REC SW (FWD)	I	Deck forward record protection input. Low means can record on forward side.
19	B-SOL+	O	Solenoid output for deck B.
20	B-MODE SW	I	Mode switch input of deck B. Low means the head is up.
21	VOL STB	O	TC9422F volume STB output
22	POWER	O	Power output control
23	B-HALF SW	I	Half switch input of deck B. Low means deck B have tape.
24	JOG-B/VOL DATA	I/O	Jog dial input and TC9422F volume data output
25	JOG-A/VOL CLK	I/O	Jog dial input and TC9422F volume clock output
26	RDS CLK	I	BU1923F(RDS demodulator) interface CLK input
27	V MOTOR	O	Motor output
28	B-PHOTO OUT	I	Reel pulse input of deck B. Have pulse input means the tape is rotating.
29	CD-RW	O	CD-RW control output
30	RES	O	CD servo reset output

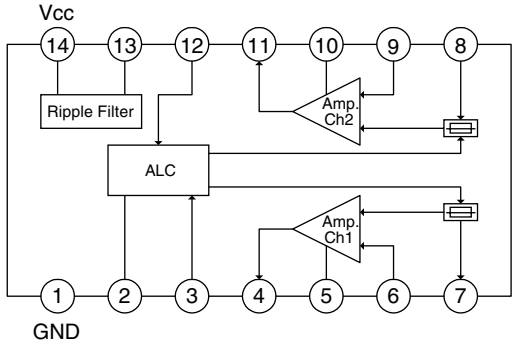
Pin No.	Symbol	I/O	Function
31	CCE	O	Servo DSP chip enable output
32	BUCK	O	Servo DSP clock output
33	BUS0	I/O	Servo DSP command and data I/O
34	BUS1	I/O	Servo DSP command and data I/O
35	BUS2	I/O	Servo DSP command and data I/O
36	BUS3	I/O	Servo DSP command and data I/O
37	SLOUT	O	Tray open/close outputs for current sensor drawer type mechanism.
38	SLIN	O	
39	SLT	I	CD pick up position input: L if pick up is in inner side.
40	SLEND	I	Current sensor input
41	NC	-	Not connected
42	RDS DATA	I	BU1923F(RDS demodulator) interface data input
43	STEREO	I	Stereo input pin for tuner stereo indication
44	POWER DETECT	I	Power down detection
45	AD K3	I	Panel key analog input
46	AD K2	I	Panel key analog input
47	AD K1	I	Panel key analog input
48	VAREF	-	Analog reference voltage input
49	BOOT	I	Control input for writing MCU program area via ICU interface.
50	VSS	-	GND (0V)
51	VDD	-	VDD (+5V)
52~91	SEG39 ~ 0	O	LCD segment outputs
92~95	COM3 ~ 0	O	LCD common outputs
96	VLC	-	LCD drive power supply
97	PLL DATA	I/O	TC9257P (PLL) interface
98	PLL CLK	O	TC9257P (PLL) interface
99	PLL PERIOD	O	TC9257P (PLL) interface
100	VDD	-	VDD (+5V)

■ AN7312 (IC202) : Dual recording/Playback pre-amplifier circuit with ALC

1. Terminal layout



2. Block diagram

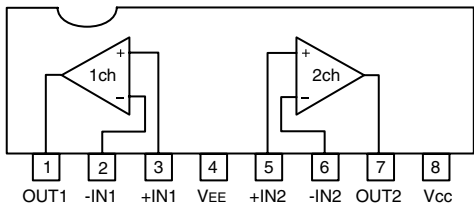


3. Pin function

Pin No.	Symbol	I/O	Function
1	GND	-	GND
2	ALC time constant	-	ALC time constant by resistance and capacitor
3	ALC input Ch.1	I	Right channel ALC input
4	Output Ch.1	O	Right channel output
5	Phase compensation Ch.1	-	No connect
6	N.F.B. Ch.1	I	Right channel negative feed back input
7	Input Ch.1	I	Right channel signal input
8	Input Ch.2	I	Left channel signal input
9	N.F.B. Ch.2	I	Left channel negative feed back input
10	Phase compensation Ch.2	-	No connect
11	Output Ch.2	O	Left channel output
12	ALC input Ch.2	I	Left channel ALC input
13	Ripple filter	-	Ripple filter
14	Vcc	-	Power supply

■ BA4558N (IC401,IC403) : Dual operational amplifier

1. Terminal layout & Block diagram

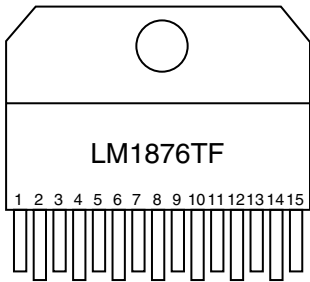


2. Pin function

Pin No.	Symbol	I/O	Function
1	OUT1	O	A output
2	-IN1	I	A -input
3	+IN1	I	A +input
4	VEE	-	V-
5	+IN2	I	B +input
6	-IN2	I	B -input
7	OUT2	O	B output
8	Vcc	-	V+

■ LM1876TF (IC402) : Overture audio power amplifier series

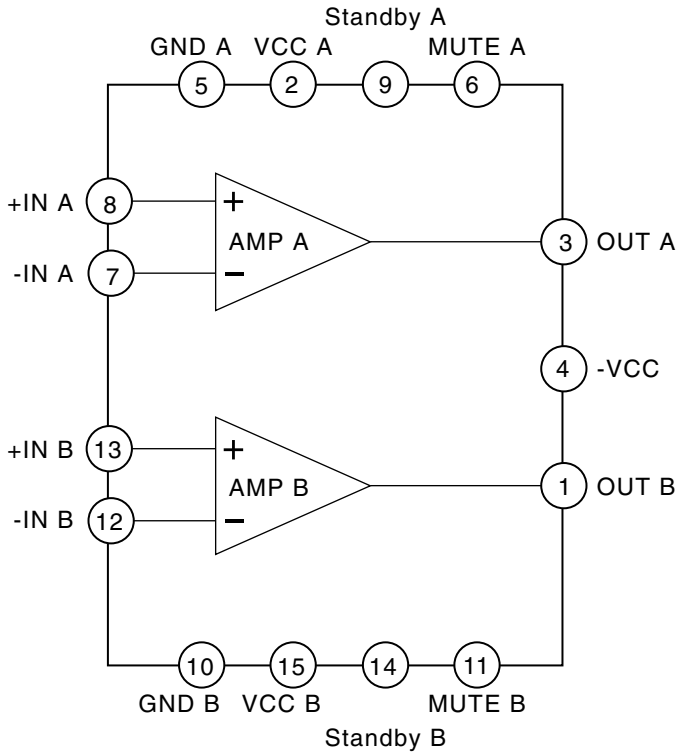
1. Terminal layout



2. Pin function

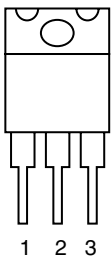
Pin No.	Symbol	I/O	Function
1	OUT B	O	B output
2	VCC A	-	A V+
3	OUT A	O	A output
4	-Vcc	-	V-
5	GND A	-	Power terminal
6	MUTE A	-	Control
7	-IN A	I	A -input
8	+IN A	I	A +input
9	Standby A	-	Control
10	GND B	-	Power terminal
11	MUTE B	-	Control
12	-IN B	I	B -input
13	+IN B	I	B +input
14	Standby B	-	Control
15	VCC B	-	B V+

3. Block diagram



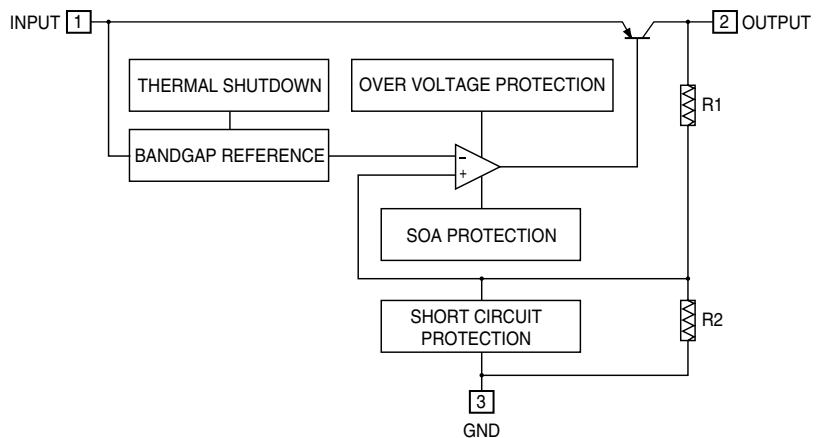
■ NJM7812A (IC302) : Regulator

1. Terminal layout



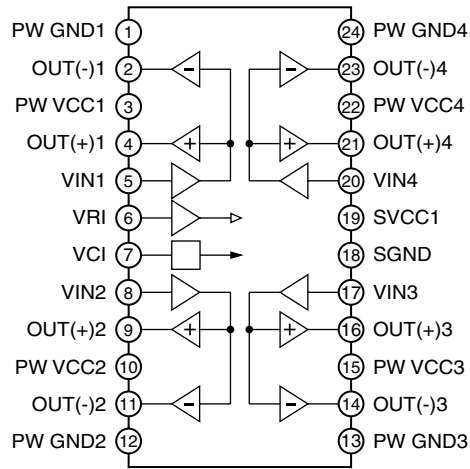
1.INPUT
2.OUTPUT (+12V)
3.GND

2. Block diagram



■TA2092N (IC703) : Power driver

1.Terminal Layout & Block Diagram

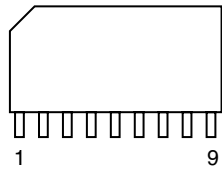


2. Pin function

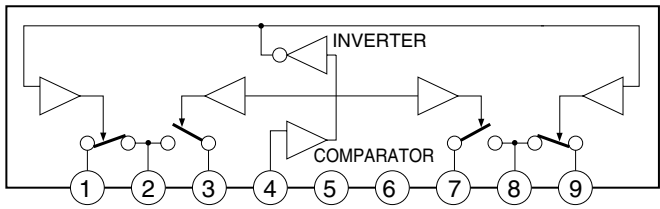
Pin No.	Symbol	I/O	Function
1	PW GND1	-	Power GND
2	OUT(-)1	O	Inverted output for CH1
3	PW VCC1	-	Supply terminal of output stage for CH1
4	OUT(+)-1	O	Non-inverted output for CH1
5	VIN1	I	Input for CH1
6	VRI	I	Input reference voltage
7	VCI	O	Output reference voltage
8	VIN2	I	Input for CH2
9	OUT(+)-2	O	Non-inverted output for CH2
10	PW VCC2	-	Supply terminal of output stage for CH2
11	OUT(-)-2	O	Inverted output for CH2
12	PW GND2	-	Power GND
13	PW GND3	-	Power GND
14	OUT(-)-3	O	Inverted output for CH3
15	PW VCC3	-	Supply terminal of output stage for CH3
16	OUT(+)-3	O	Non-inverted output for CH3
17	VIN3	I	Input for CH3
18	SGND	-	Supply terminal of small signal GND
19	SVCC1	-	Small signal GND
20	VIN4	I	Input for CH4
21	OUT(+)-4	O	Non-inverted output for CH4
22	PW VCC4	-	Supply terminal of output stage for CH4
23	OUT(-)-4	O	Inverted output for CH4
24	PW GND4	-	Power GND

■UPC1330 (IC201) : REC/PB audio head switch

1. Terminal layout



2. Block diagram



3. Pin function

Pin No.	Symbol	I/O	Function
1	SWR1	-	Record SW (Left channel)
2	GND	-	GND
3	SWP1	-	Play SW (Left channel)
4	CONT	-	Record/play control pin
5	GND	-	GND
6	VCC	-	Power supply
7	SWP2	-	Play SW (Right channel)
8	GND	-	GND
9	SWR2	-	Record SW (Right channel)

■ TA2104BN (IC101) : 1chip AM/FM, MPX tuner system

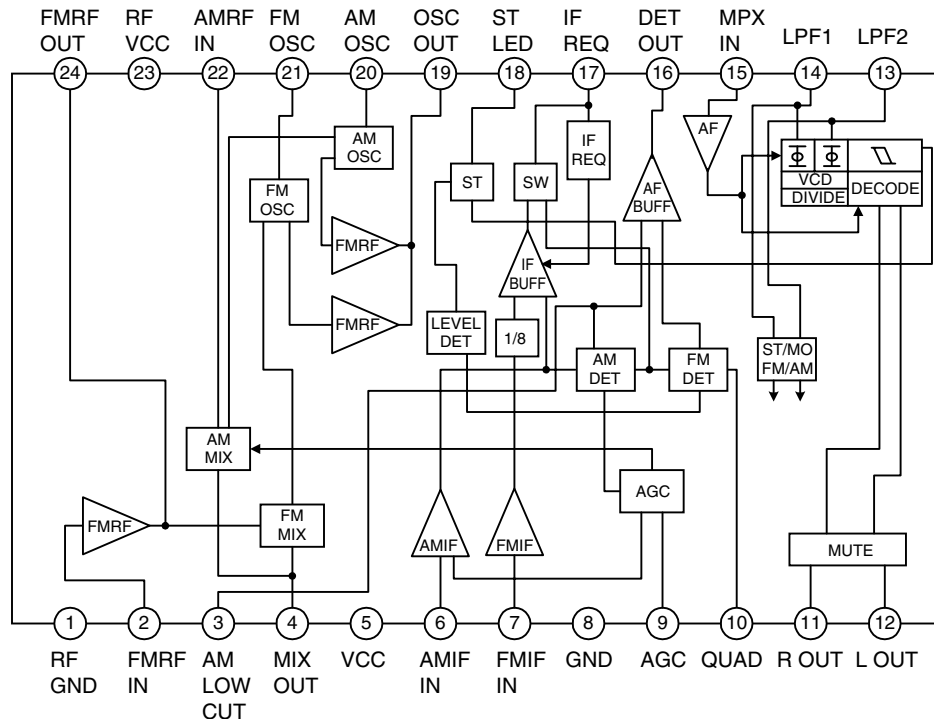
1. Terminal layout

RFGND	1	24	FMRF OUT
FMRF IN	2	23	RF VCC
AM LOW CUT	3	22	AMRF IN
MIX OUT	4	21	FM OSC
VCC	5	20	AM OSC
AMIF IN	6	19	OSC OUT
FMIF IN	7	18	ST LED
GND	8	17	IF REQ
AGC	9	16	DET OUT
QUAD	10	15	MPX IN
R OUT	11	14	LPF1
L OUT	12	13	LPF2

2. Pin function

Pin No.	Symbol	I/O	Function
1	RFGND	-	Ground terminal for RF
2	FMRF IN	I	Input of FMRF signal
3	AM LOW CUT	I	AM low frequency cut
4	MIX OUT	O	Output of FM/AM RF mix
5	VCC	-	Power supply terminal
6	AMIF IN	I	Input of AMIF signal
7	FMIF IN	I	Input of FMIF signal
8	GND	-	Ground terminal
9	AGC	I	AGC voltage input terminal
10	QUAD	I	OSC terminal for FM DET.
11	R OUT	O	Output R-channel
12	L OUT	O	Output L-channel
13	LPF2	I	FM/AM switch
14	LPF1	I	Stereo/monoral switch
15	MPX IN	I	Multiplex signal input
16	DET OUT	O	AM/FM detection output
17	IF REQ	O	IF out/REQ out
18	ST LED	O	Stereo indicator output
19	OSC OUT	O	PLL data bus for FM or AM
20	AM OSC	-	AM local oscillation circuit
21	FM OSC	-	FM local oscillation circuit
22	AMRF IN	I	Input of AMRF signal
23	RF VCC	-	Power supply terminal for RF
24	FMRF OUT	O	Output of FMRF signal

3. Block diagram

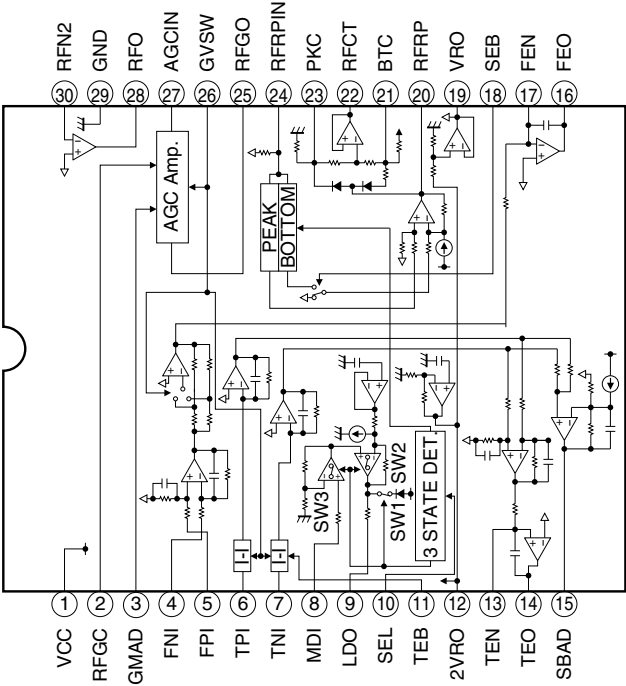


■TA2153FN (IC704) : RF amplifier for digital servo

1. Terminal layout

VCC	1	30	RFN2
RFGC	2	29	GND
GMAD	3	28	RFO
FNI	4	27	AGCIN
FPI	5	26	GVSW
TPI	6	25	RFGO
TNI	7	24	RFRPIN
MDI	8	23	PKC
LDO	9	22	RFCT
SEL	10	21	BTC
TEB	11	20	RFRP
2VRO	12	19	VRO
TEN	13	18	SEB
TEO	14	17	FEN
SBAD	15	16	FEO

2. Block diagram



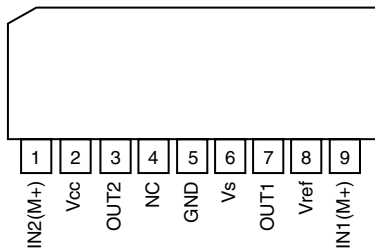
3. Pin function

Pin No.	Symbol	I/O	Function																
1	VCC	-	Power supply input terminal																
2	RFGC	I	RF amplitude adjustment control signal input terminal. Controlled by 3-PWM signals. (PWM carrier = 88.2kHz)																
3	GMAD	I	Open loop gain adjustment terminal for AGC amplifier																
4	FNI	I	Main beam I-V amplifier input terminal																
5	FPI	I	Main beam I-V amplifier input terminal																
6	TPI	I	Sub beam I-V amplifier input terminal																
7	TNI	I	Sub beam I-V amplifier input terminal																
8	MDI	I	Monitor photo diode amplifier input terminal																
9	LDO	O	Laser diode amplifier input terminal																
10	SEL	I	Laser diode control signal input terminal and APC circuit ON/OFF control signal terminal <table><tr><th>SEL level</th><th>APC circuit</th><th>LDO</th><th>Detect frequency</th></tr><tr><td>GND</td><td>OFF</td><td>Connected to Vcc through resistor (1kohm)</td><td>Low</td></tr><tr><td>Hiz</td><td>ON</td><td>Control signal output</td><td>Low</td></tr><tr><td>Vcc</td><td>ON</td><td>Control signal output</td><td>High</td></tr></table>	SEL level	APC circuit	LDO	Detect frequency	GND	OFF	Connected to Vcc through resistor (1kohm)	Low	Hiz	ON	Control signal output	Low	Vcc	ON	Control signal output	High
SEL level	APC circuit	LDO	Detect frequency																
GND	OFF	Connected to Vcc through resistor (1kohm)	Low																
Hiz	ON	Control signal output	Low																
Vcc	ON	Control signal output	High																
11	TEB	I	Tracking error balance adjustment signal input terminal. Controlled by 3-PWM signals. (PWM carrier = 88.2kHz)																
12	2VRO	O	Reference voltage (2VRO) output terminal 2RVO = 4.2V when Vcc = 5V																
13	TEN	I	TE amplifier negative input terminal																
14	TEO	O	TE error signal output terminal																
15	SBAD	O	Sub beam adder signal output terminal																
16	FEO	O	Focus error signal output terminal																
17	FEN	I	FE amplifier negative input terminal																

Pin No.	Symbol	I/O	Function									
18	SEB	I	RFRP output circuit switching terminal <table><tr><td>SEL level</td><td>Bottom detection</td><td>Peak detection</td></tr><tr><td>GND</td><td>ON</td><td>ON</td></tr><tr><td>Vcc</td><td>OFF</td><td>ON</td></tr></table>	SEL level	Bottom detection	Peak detection	GND	ON	ON	Vcc	OFF	ON
SEL level	Bottom detection	Peak detection										
GND	ON	ON										
Vcc	OFF	ON										
19	VRO	O	Reference signal (VRO) output terminal									
20	RFRP	O	Track count signal output terminal									
21	BTC	I	Time constant adjustment terminal for bottom detection									
22	RFCT	O	RFRP signal center level output terminal									
23	PKC	I	Time constant adjustment terminal for peak detection									
24	RFRPIN	I	Input terminal for track count signal output amplifier									
25	RFGO	O	Output terminal for RF signal amplitude adjustment amplifier									
26	GVSW	I	Amplifier (AGC, FE, TE) gain switching terminal <table><tr><td>GVSW</td><td>Mode</td></tr><tr><td>GND</td><td>CD-RW</td></tr><tr><td>Hiz</td><td>Normal</td></tr><tr><td>Vcc</td><td>Normal</td></tr></table>	GVSW	Mode	GND	CD-RW	Hiz	Normal	Vcc	Normal	
GVSW	Mode											
GND	CD-RW											
Hiz	Normal											
Vcc	Normal											
27	AGCIN	I	Input terminal for RF signal amplitude adjustment amplifier									
28	RFO	O	Output terminal RF signal amplifier									
29	GND	-	Ground terminal									
30	RFN2	I	Input terminal for RF signal amplifier									

■ TA7291S (IC702) : Bridge driver

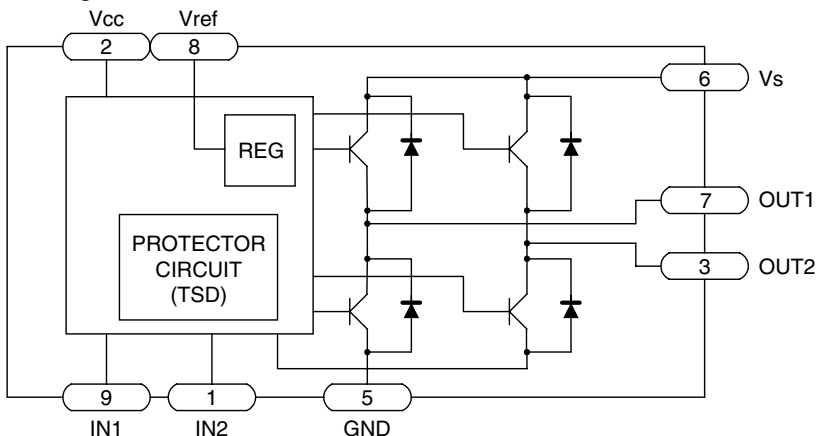
1. Terminal Layout



2. Pin function

Pin No.	Symbol	I/O	Function
1	IN2(M-)	I	Input terminal
2	Vcc	-	Supply voltage terminal for logic
3	OUT2	O	Output terminal
4	NC	-	Not connect
5	GND	-	Ground terminal
6	Vs	-	Supply voltage terminal for motor driver
7	OUT1	O	Output terminal
8	Vref	-	Supply voltage terminal for control
9	IN1(M+)	I	Input terminal

3. Block diagram

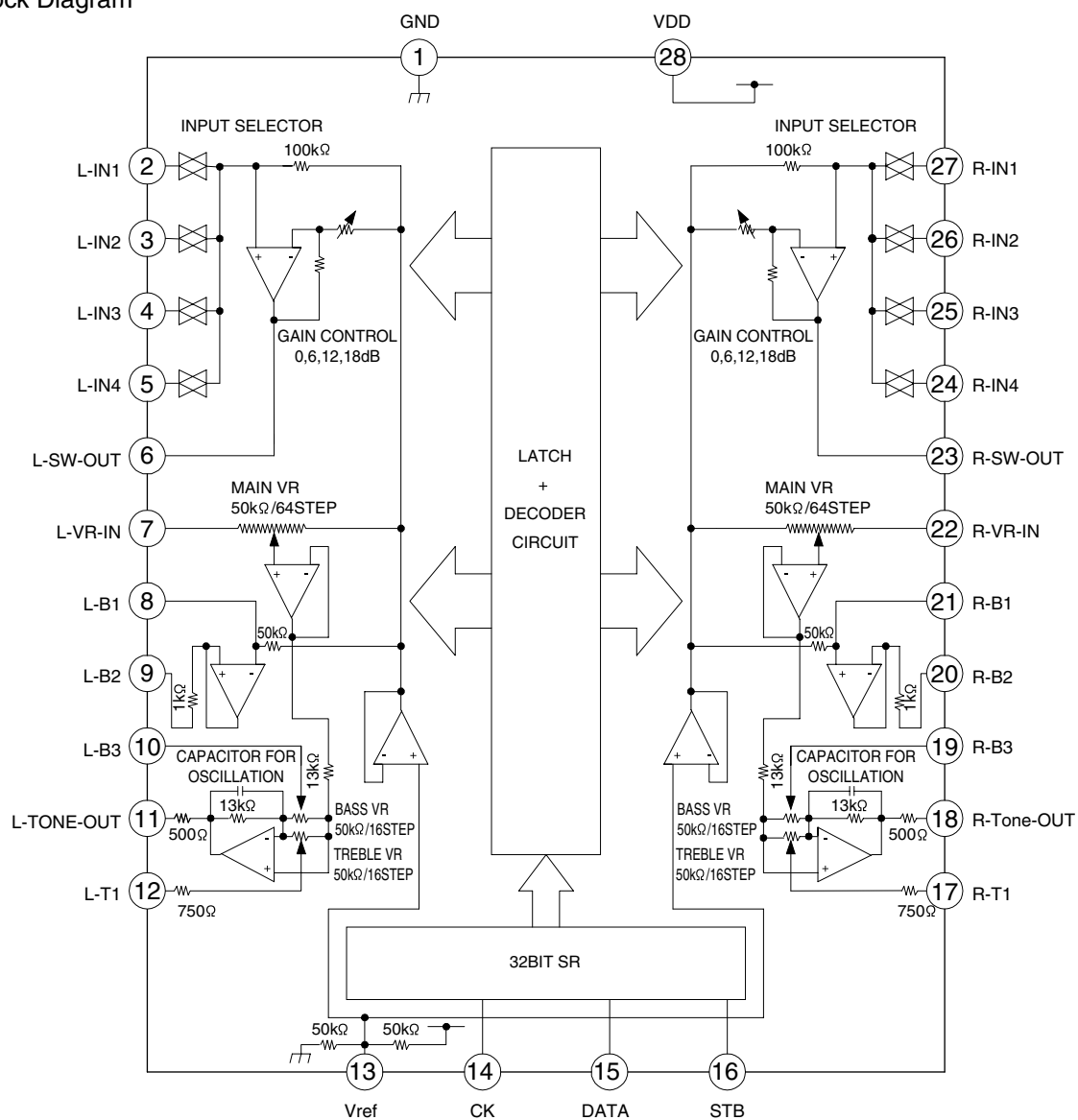


TC9422F (IC301) : System electronic volume

1.Terminal Layout

GND	1	28	VDD
L-IN1	2	27	R-IN1
L-IN2	3	26	R-IN2
L-IN3	4	25	R-IN3
L-IN4	5	24	R-IN4
L-SW-OUT	6	23	R-SW-OUT
L-VR-IN	7	22	R-VR-IN
L-B1	8	21	R-B1
L-B2	9	20	R-B2
L-B3	10	19	R-B3
L-TONE-OUT	11	18	R-TONE-OUT
L-T1	12	17	R-T1
Vref	13	16	STB
CK	14	15	DATA

2.Block Diagram



3.Pin Function

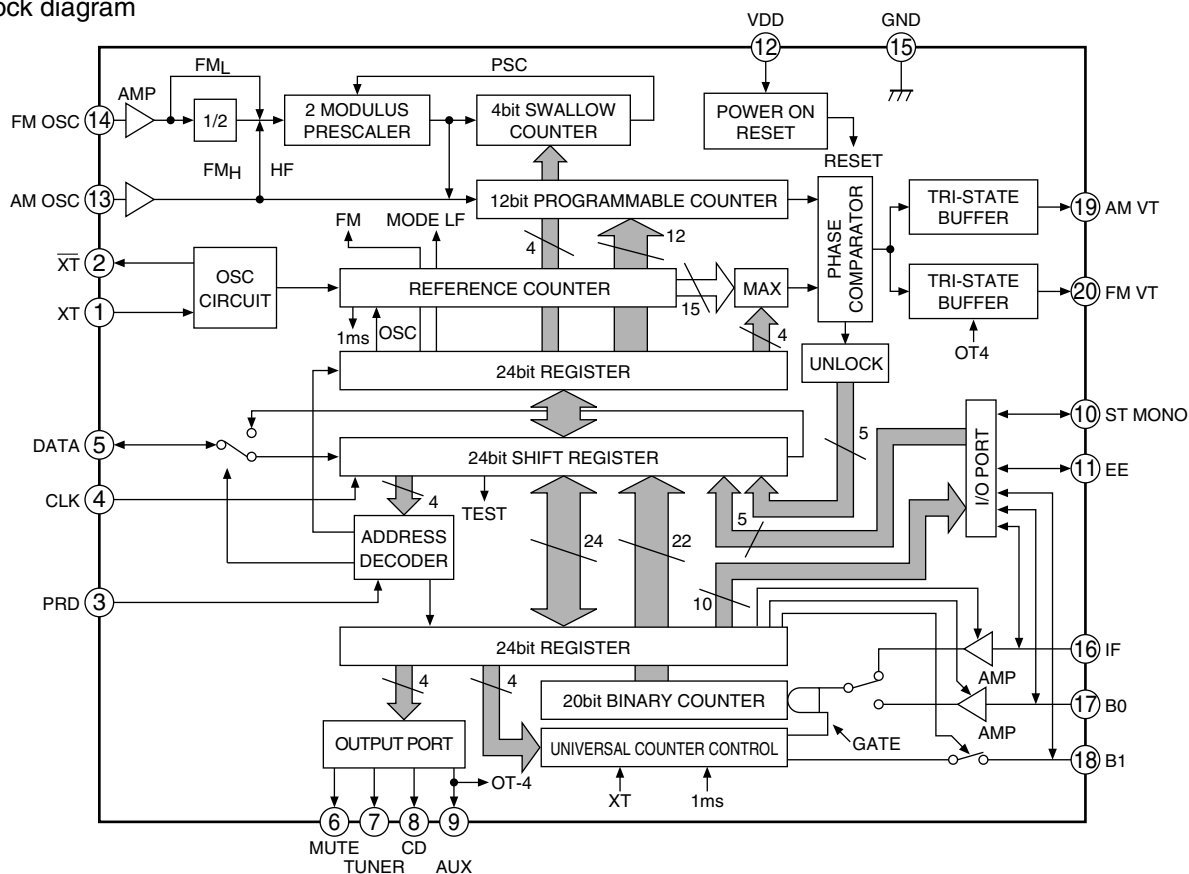
Pin No.	Symbol	I/O	Function
1	GND	-	Ground pin
2	L-IN1	I	Audio signal input pin (L-ch)
3	L-IN2	I	Audio signal input pin (L-ch)
4	L-IN3	I	Audio signal input pin (L-ch)
5	L-IN4	I	Audio signal input pin (L-ch)
6	L-SW-OUT	O	Audio signal output pin (L-ch)
7	L-VR-IN	I	Main volume input pin (L-ch)
8	L-B1	I	Tone control tap pin 1 for bus
9	L-B2	I	Tone control tap pin 2 for bus
10	L-B3	I	Tone control tap pin 3 for bus
11	L-TONE-OUT	O	Tone control output pin (L-ch)
12	L-T1	I	Tone control tap pin for treble (L-ch)
13	Vref	I	Reference voltage input pin
14	CK	I	Clock input pin
15	DATA	I	Data input pin
16	STB	I	Strobe input pin
17	R-T1	I	Tone control tap pin for treble (R-ch)
18	R-TONE-OUT	O	Tone control output pin (R-ch)
19	R-B3	I	Tone control tap pin 3 for bus
20	R-B2	I	Tone control tap pin 2 for bus
21	R-B1	I	Tone control tap pin 1 for bus
22	R-VR-IN	I	Main volume input pin (R-ch)
23	R-SW-OUT	O	Audio signal output pin (R-ch)
24	R-IN4	I	Audio signal input pin (R-ch)
25	R-IN3	I	Audio signal input pin (R-ch)
26	R-IN2	I	Audio signal input pin (R-ch)
27	R-IN1	I	Audio signal input pin (R-ch)
28	VDD	-	Power supply voltage pin

■ TC9257F (IC102) : PLL frequency synthesizer

1. Terminal layout

XT	1	20	FM VT
XT	2	19	AM VT
PRD	3	18	B1
CLK	4	17	B0
DATA	5	16	IF
MUTE	6	15	GND
TUNER	7	14	FM OSC
CD	8	13	AM OSC
AUX	9	12	VDD
ST MONO	10	11	EE

2. Block diagram

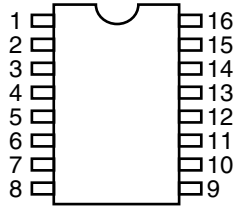


3. Pin function

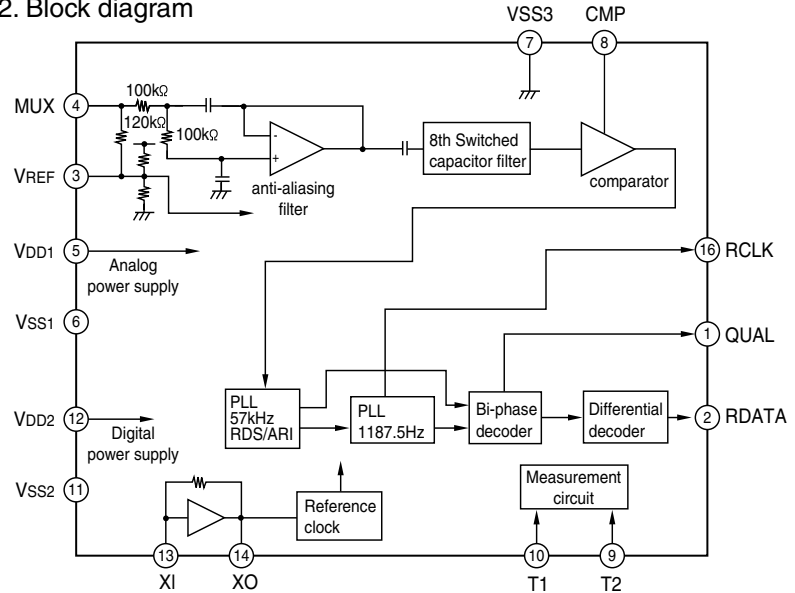
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	XT	I	Crystal oscillator pins	11	EE	I/O	General-purpose I/O port
2	$\overline{\text{XT}}$	O	Crystal oscillator pins	12	VDD	-	Power supply pin
3	PRD	I	Period signal input	13	AM OSC	I	Programmable counter input
4	CLK	I	Clock signal input	14	FM OSC	I	Programmable counter input
5	DATA	I/O	Serial data input/output	15	GND	-	Ground pin
6	MUTE	O	General-purpose output port	16	IF	I/O	General-purpose I/O port
7	TUNER	O	General-purpose output port	17	B0	I/O	General-purpose I/O port
8	CD	O	General-purpose output port	18	B1	I/O	General-purpose I/O port
9	AUX	O	General-purpose output port	19	AM VT	O	Phase comparator output
10	ST MONO	I/O	General-purpose I/O port	20	FM VT	O	Phase comparator output

■ BU1923F (IC602) : RDS decoder

1. Terminal layout



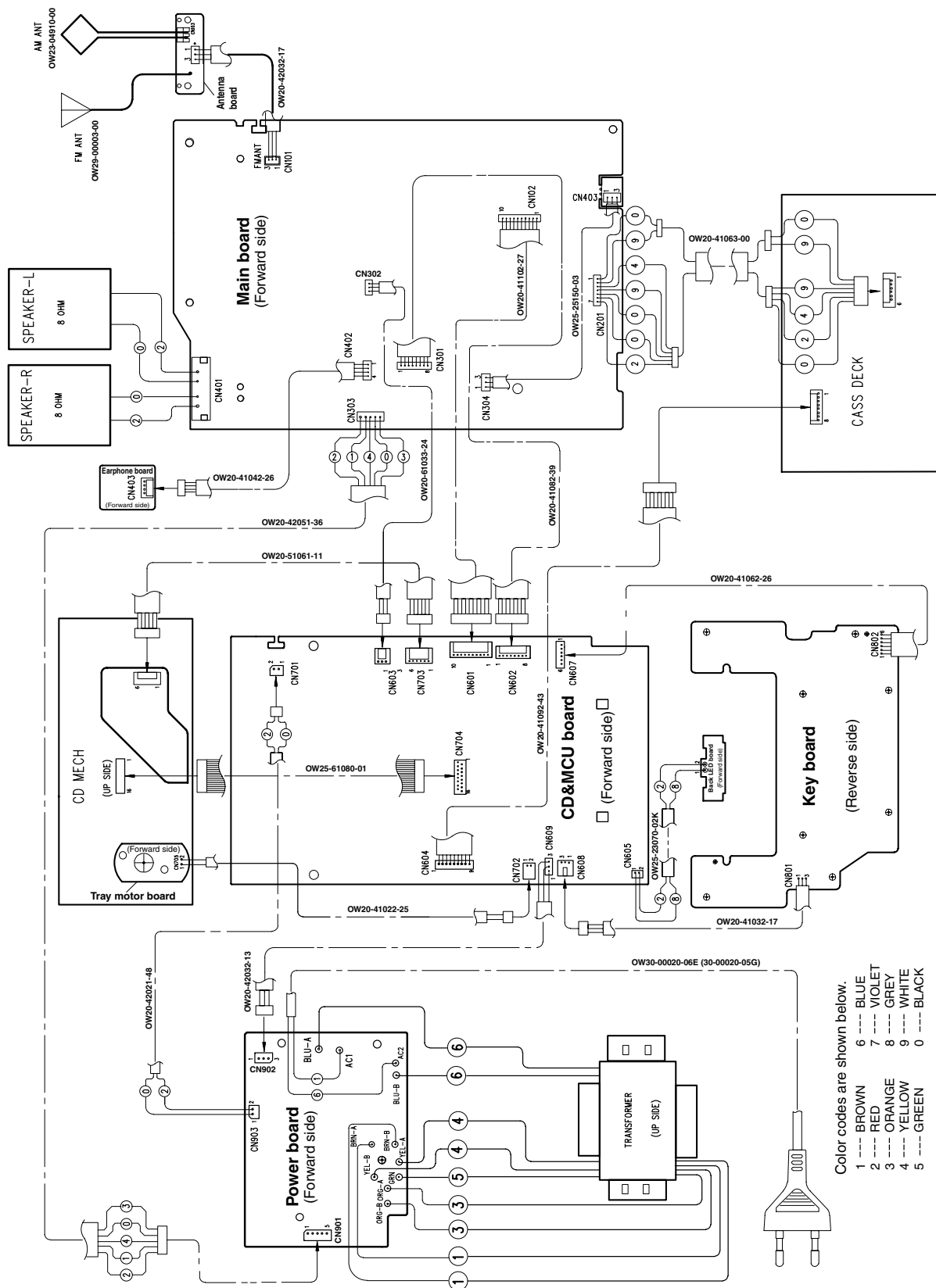
2. Block diagram



3. Pin function

Pin No.	Symbol	I/O	Function
1	QUAL	O	Demodulator quality good: HI
2	RDATA	O	Demodulator data
3	VREF	-	1/2 VDD1 see application
4	MUX	-	Composite see application
5	VDD1	-	Analog power supply
6	VSS1	-	Analog power supply
7	VSS3	-	Analog power supply
8	CMP	-	See application
9	T1	-	H: Internal clock stop L: operation
10	T2	-	Testing (do not use)
11	VSS2	-	Digital power supply
12	VDD2	-	Digital power supply
13	XI	-	4.332MHz see application
14	XO	-	4.332MHz see application
15	NC	-	No connection
16	RCLK	-	1187.5Hz

Wiring connection



< M E M O >



VICTOR COMPANY OF JAPAN, LIMITED

AUDIO & COMMUNICATION BUSINESS DIVISION

PERSONAL & MOBILE NETWORK BUSINESS UNIT. 10-1, 1Chome, Ohwatari-machi, maebashi-city, 371-8543, Japan

PARTS LIST

[UX-M5R]

* All printed circuit boards and its assemblies are not available as service parts.

Area suffix	
B -----	U.K.
E -----	Continental Europe
EN -----	Northern Europe
EV -----	Eastern Europe

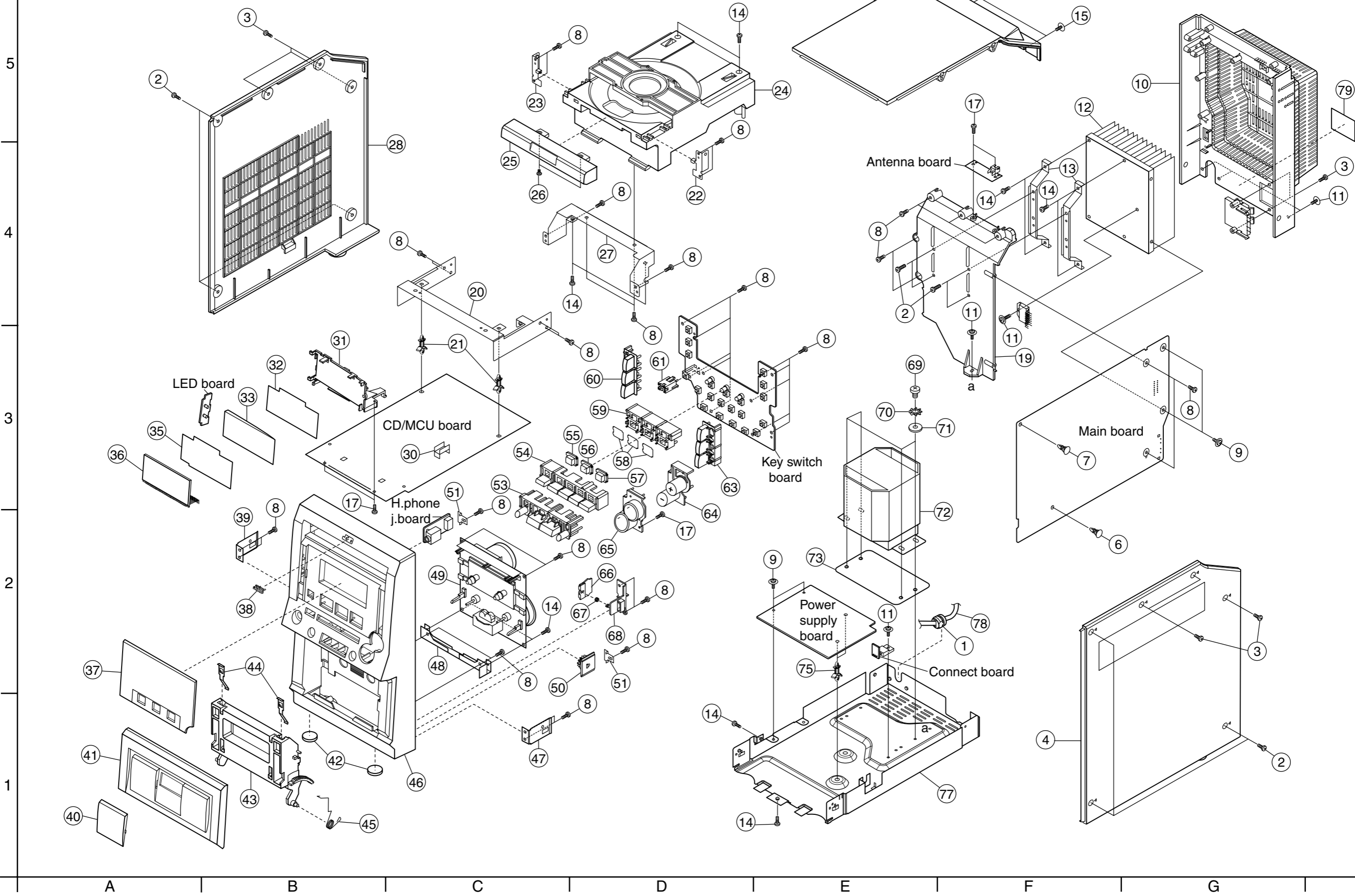
- Contents -

Exploded view of general assembly and parts list (Block No.M1)	3-	3
Electrical parts list (Block No.01~04).....	3-	5
Packing materials and accessories parts list (Block No.M3,M5).....	3-	14

< M E M O >

Exploded view of general assembly and parts list

Block No. M 1 M M



UX-M5R

UX-M5R

■ Parts list (General assembly)

Block No. M1MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
△	1	OW84-10002-02	S.R BUSHING	1	SR-F41	
	2	OW40-23010-52	SCREW	10	M3X10 BH/MS	
	3	OW40-13012-01	SCREW	8	M3X12 BH/ST	
	4	OW61-30000-02	RIGHT SIDE PLATE	1		
	6	OW84-00006-01	PCB LOCK SUPPORT	1	RS-5	
	7	OW84-30000-02	PCB LOCK SUPPORT	1	RS-3	
	8	OW40-13008-91	SCREW	41	M3X8 BH/ST	
	9	OW40-03006-53	SCREW	4	M3X6 WH/MS TAP	
	10	OW61-50000-02	REAR CABINET	1		
	11	OW40-03008-53	SCREW	6	M3X8 WH/MS TAP	
	12	OW39-50000-01	HEAT SINK	1		
	13	OW39-50000-02	HEAT SINK	2		
	14	OW40-03006-81	SCREW	12	M3X6 BH/MS TAP	
	15	OW40-13012-03	SCREW	2	M3X12 WH/ST	
	16	OW60-30000-01	TOP CABINET	1		
	17	OW40-12608-21	SCREW	5	2.6X8 BH/ST	
	19	OW48-50000-01	MAIN PCB BRACKET	1		
	20	OW39-30000-03	CD REAR MOUNT BKT	1		
	21	OW84-30000-05	PCB LOCK SUPPORT	2	CS-0813	
	22	OW39-30000-01	CD F.MOUNT BKT	1	RIGHT	
	23	OW39-30000-00	CD F.MOUNT BKT	1	LEFT	
	24	OW98-00110-03	CD MECHA	1	TCP11TK4 +TD001	
	25	OW66-30000-04	CD DOOR	1		
	26	OW40-12605-21	SCREW	2	2.6X5 BH/ST	
	27	OW39-30000-02	CD F.MOUNT BKT	1	FRONT	
	28	OW61-30000-01	SIDE PLATE	1	LEFT	
	30	OW39-00013-00A	CDT13 HEAT SINK	1		
	31	OW48-30000-01	LCD BLACKET	1		
	32	OW68-50000-00	LIGHT GUIDE PAPER	1		
	33	OW43-30000-05	LIGHT GUIDE	1		
	35	OW68-30000-01	LCD FILTER	1		
	36	OW91-80005-00	LCD	1	92194TT-P YEEBO	
	37	OW43-30000-12	DISPLAY LENS	1		
	38	OW55-30000-00	BADGE	1		
	39	OW39-30000-04	FP MOUNT BRACKET	1	LEFT SIDE BASE	
	40	OW43-30000-11	CASS DOOR LENS	1		
	41	OW66-30000-01	CASS DOOR COVER	1		
	42	OW81-00155-01	RUBER FOOT	2		
	43	OW66-00155-03	TECHNICAL DOOR	1		
	44	OW39-30000-07	CASS TAPE SPRING	2		
	45	OW36-30000-00	TORSION SPRING	1		
	46	OW60-30000-07	FRONT CABINET	1		
	47	OW39-30000-05	FP MOUNT BRACKET	1	RIGHT SIDE BASE	
	48	OW39-00055-01	DECK MECHA BKT	1		
	49	OW94-33439-01	CASSETTE MECHA	1	12V/AUTO-REV	
	50	OW63-00155-01	DAMPER GEAR	1		
	51	OW39-00155-13	D.GERA HOLDER	2		
	53	OW53-30000-06	KEY BUTTON	1	RECORD/DIRECTION	

■ Parts list (General assembly)

Block No. M1MM

△	Item	Parts number	Parts name	Q'ty	Description	Area
△	54	OW53-30000-09	KEY BUTTON	1	STOP/PROGRAM	
	55	OW43-30000-14	LENS FUNCTION	1	CD	
	56	OW43-30000-15	LENS FUNCTION	1	TUNER	
	57	OW43-30000-16	LENS FUNCTION	1	TAPE	
	58	OW68-30000-02	F.KEY FILTER	3	FUNCTION	
	59	OW53-30000-04	KEY BUTTON	1	FUNCTION	
	60	OW53-30000-01	KEY BUTTON	1	OPEN/CLOSE	
	61	OW48-30000-02	REMOTE SENSOR	1		
	63	OW53-30000-00	KEY BUTTON	1	STANDBY	
	64	OW53-30000-05	KEY BUTTON	1	VOLUME	
	65	OW48-30000-00	ORNAMENT	1	RING	
	66	OW49-00155-01	LACH CAM	1		
	67	OW36-00155-03A	COMPRESS SPRING	1		
	68	OW49-00155-02	LATCH CAM HOLDER	1		
	69	OW40-10408-81	SCREW	4	M4X8 BH	
	70	OW35-20001-01	TOOTH WASHER	4		
	71	OW35-00010-03	METAL WASHER	4		
	72	OW15-80005-00	POWER TRANS	1	EI-76 T05875A VDE	
	73	OW39-00006-02	TRANS M.BRACKET	1		
	75	OW84-30000-04	PCB LOCK SUPPORT	2	CS-0610	
	77	OW39-50000-00	BOTTOM CASE	1		
	78	OW30-00020-06E	AC POWER COARD	1	7 VDE BLK	E,EN,EV
		OW30-00053-09	AC POWER COARD	1	6.5 MOULDED	B
	79	OW87-50000-08	NAME PLATE	1		EV
		OW87-50000-02	NAME PLATE	1		B,E,EN

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	CF101	OW09-50450-00J	CERAMIC FILTER	SFU450B 450HK2			C160	OW05-03682-06T	CHIP CAPACITOR	6800PF K682	
	CF102	OW09-50107-20J	CERAMIC FILTER	LT10.7MS3 RED			C161	OW05-03682-06T	CHIP CAPACITOR	6800PF K682	
	CF103	OW09-50107-07J	CERAMIC DIS	JT10.7MFG82			C166	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	CN01A	OW20-12030-00	CONNECTOR HEAD	P=2.5MM 3PIN			C168	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	CN102	OW20-41102-27	CONNECTOR	P=2MM 10PIN			C169	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	CN201	OW20-41063-00	CONNECTOR HOUG	P=2MM 6PIN			C201	OW05-03151-03T	C.CAPACITOR	150PF N151J 500A	
	CN301	OW20-41082-39	CONNECTOR HOUG	P=2MM 8PIN			C202	OW05-03182-06T	C.CAPACITOR	0.0018MF K182	
	CN302	OW20-61033-24	CONNECTOR	3PIN			C203	OW06-50105-02	E.CAPACITOR	1MF 50V	
	CN303	OW20-42051-36	CONNECTOR HOUG	P=2.5MM 5PIN			C204	OW06-16227-00	E.CAPACITOR	220MF 16V	
	CN401	OW12-00006-02	CONNECTOR	CJ-9007-040			C205	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	CN402	OW20-41042-26	CONNECTOR HOUG	P=2MM 4PIN			C206	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	CN403	OW25-25150-03	3P CABLE	UL2468			C207	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C102	OW05-00223-02	C.CAPACITOR	0.022MF			C208	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C103	OW05-03300-10	CHIP CAPACITOR	30PF 5% SMD NPO			C209	OW05-03272-06T	C.CAPACITOR	0.0027MF K272	
	C104	OW05-09391-05	PP CAPACITOR	390PF 5% 5MM			C210	OW05-03331-03T	CHIP CAPACITOR	330PF N500 J331	
	C105	OW05-03180-06T	C.CAPACITOR	18PF N180J 500A			C211	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C107	OW05-00220-06	C.CAPACITOR	22PF 5% NPO			C212	OW05-03472-06T	C.CAPACITOR	4700PF K472	
	C108	OW05-00200-06	C.CAPACITOR	20PF 5% NPO			C213	OW05-03563-06T	C.CAPACITOR	0.056MF	
	C109	OW05-00470-06	C.CAPACITOR	47PF 5% NPO			C214	OW05-03473-06T	C.CAPACITOR	0.047MF K473	
	C110	OW05-07104-82B	C.CAPACITOR	0.1MF 50V			C215	OW06-50224-02	E.CAPACITOR	0.22MF 50V	
	C111	OW05-03102-06T	C.CAPACITOR	1000PF K102			C216	OW06-16476-00	E.CAPACITOR	47MF 16V	
	C116	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%			C217	OW05-03561-03T	CHIP CAPACITOR	560PF N500 J560	
	C117	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%			C220	OW05-03151-03T	C.CAPACITOR	150PF N151J 500A	
	C118	OW05-03102-06T	C.CAPACITOR	1000PF K102			C221	OW05-03151-03T	C.CAPACITOR	150PF N151J 500A	
	C119	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V			C222	OW05-03151-03T	C.CAPACITOR	150PF N151J 500A	
	C120	OW05-03120-03T	C.CAPACITOR	12PF N500 J120 500V			C223	OW05-03182-06T	C.CAPACITOR	0.0018MF K182	
	C121	OW05-00102-00	C.CAPACITOR	0.001MF 10% 50V			C224	OW06-50105-02	E.CAPACITOR	1MF 50V	
	C122	OW05-03331-03T	CHIP CAPACITOR	330PF N500 J331			C225	OW06-16227-02	E.CAPACITOR	220MF 16V	
	C123	OW06-16106-00	E.CAPACITOR	10MF 16V			C226	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C124	OW06-50105-00	E.CAPACITOR	1MF 50V			C227	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C125	OW06-50104-00	E.CAPACITOR	0.1MF 50V			C228	OW05-03331-03T	CHIP CAPACITOR	330PF N500 J331	
	C126	OW06-50104-00	E.CAPACITOR	0.1MF 50V			C229	OW06-50475-02	E.CAPACITOR	4.7MF 50V	
	C127	OW06-50474-00	E.CAPACITOR	0.47MF 50V			C230	OW05-03272-06T	C.CAPACITOR	0.0027MF K272	
	C128	OW05-03223-06T	C.CAPACITOR	0.022MF K223			C231	OW05-03473-06T	C.CAPACITOR	0.047MF K473	
	C129	OW06-16227-00	E.CAPACITOR	220MF 16V			C232	OW05-03472-06T	C.CAPACITOR	4700PF K472	
	C131	OW05-03333-06T	C.CAPACITOR	0.033MF K333			C233	OW05-03563-06T	C.CAPACITOR	0.056MF	
	C132	OW06-50475-02	E.CAPACITOR	4.7MF 50V			C234	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C133	OW06-50475-00	E.CAPACITOR	4.7MF 50V			C235	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C134	OW06-50475-00	E.CAPACITOR	4.7MF 50V			C236	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C135	OW05-03103-06T	C.CAPACITOR	0.01MF K103			C237	OW06-50224-00	E.CAPACITOR	0.22MF 50V	
	C136	OW05-03103-06T	C.CAPACITOR	0.01MF K103			C238	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C137	OW05-03300-10	CHIP CAPACITOR	30PF 5%			C239	OW05-03561-03T	CHIP CAPACITOR	560PF N500 J560	
	C138	OW05-03103-06T	C.CAPACITOR	0.01MF K103			C240	OW05-02183-10	M.CAPACITOR	0.018MF 10%	
	C139	OW06-16227-00	E.CAPACITOR	220MF 16V			C241	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C141	OW05-03103-06T	C.CAPACITOR	0.01MF K103			C242	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C142	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A			C243	OW06-16107-00	E.CAPACITOR	100MF 16V	
	C143	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%			C250	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C144	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A			C251	OW05-02102-10	M.CAPACITOR	0.001MF 10%	
	C145	OW06-50335-00	E.CAPACITOR	3.3MF 50V			C253	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C146	OW05-03223-06T	C.CAPACITOR	0.022MF K223			C254	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C147	OW06-16227-00	E.CAPACITOR	220MF 16V			C302	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C148	OW05-03223-06T	C.CAPACITOR	0.022MF K223			C303	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C149	OW05-03103-06T	C.CAPACITOR	0.01MF K103			C304	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C150	OW05-03222-06F	CHIP CAPACITOR	2200PF 10E222K			C305	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C151	OW06-50105-00	E.CAPACITOR	1MF 50V			C306	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C152	OW05-03223-06T	C.CAPACITOR	0.022MF K223			C307	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C153	OW05-03223-06T	C.CAPACITOR	0.022MF K223			C308	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C154	OW06-16227-00	E.CAPACITOR	220MF 16V			C309	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C155	OW05-03300-10	CHIP CAPACITOR	30PF 5% SMD NPO			C310	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C156	OW05-03300-10	CHIP CAPACITOR	30PF 5% SMD NPO			C311	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C157	OW06-16227-00	E.CAPACITOR	220MF 16V			C312	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C158	OW05-03223-06T	C.CAPACITOR	0.022MF K223			C313	OW05-03470-03T	C.CAPACITOR	47PF N500 J470	
	C159	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A			C314	OW05-03470-03T	C.CAPACITOR	47PF N500 J470	

■ Electrical parts list (Main board) Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
	C315	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C316	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C317	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C318	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C319	OW06-50105-90	E.CAPACITOR	1MF 50V 10%	
	C320	OW06-50105-90	E.CAPACITOR	1MF 50V 10%	
	C321	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C322	OW06-50475-00	E.CAPACITOR	4.7MF 50V	
	C323	OW05-03103-06T	C.CAPACITOR	0.01MF K103	
	C324	OW05-03103-06T	C.CAPACITOR	0.01MF K103	
	C325	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C326	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
	C327	OW06-16337-00	E.CAPACITOR	330MF 16V	
	C328	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C329	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C330	OW06-16476-00	E.CAPACITOR	47MF 16V	
	C331	OW06-16107-00	E.CAPACITOR	100MF 16V	
	C332	OW06-25107-00	E.CAPACITOR	100MF 25V	
	C333	OW05-03104-03T	CHIP CAPACITOR	0.1MF 10%	
△	C334	OW06-25228-00	E.CAPACITOR	2200MF 25V	
	C401	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C402	OW06-16106-02	E.CAPACITOR	10MF 16V	
	C403	OW06-16226-00	E.CAPACITOR	22MF 16V	
	C404	OW06-16106-02	E.CAPACITOR	10MF 16V	
	C405	OW06-16106-02	E.CAPACITOR	10MF 16V	
	C406	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C407	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C408	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C409	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C410	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C411	OW06-50105-00	E.CAPACITOR	1MF 50V	
	C412	OW05-07101-10A	C.CAPACITOR	100PF 10%	
	C413	OW05-07101-10A	C.CAPACITOR	100PF 10%	
	C414	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C415	OW06-16106-00	E.CAPACITOR	10MF 16V	
	C416	OW05-02104-10	M.CAPACITOR	0.1MF 10%	
	C417	OW05-02104-10	M.CAPACITOR	0.1MF 10%	
△	C418	OW06-35228-00	E.CAPACITOR	2200MF 35V	
△	C419	OW06-35228-00	E.CAPACITOR	2200MF 35V	
	C420	OW06-16227-00	E.CAPACITOR	220MF 16V	
	C421	OW06-25227-00	E.CAPACITOR	220MF 25V 20%	
	C422	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C423	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C424	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C425	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C426	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C427	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C432	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C433	OW05-03101-06T	C.CAPACITOR	100PF N101J 500A	
	C434	OW06-25227-00	E.CAPACITOR	220MF 25V 20%	
	C435	OW06-35477-00	E.CAPACITOR	470MF 35V	
	C450	OW05-07223-82A	C.CAPACITOR	0.022MF	
	C451	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C452	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C453	OW06-50225-02	E.CAPACITOR	2.2MF 50V	
	C454	OW06-25476-00	E.CAPACITOR	47MF 25V	
	C455	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C456	OW06-35477-00	E.CAPACITOR	470MF 35V	
	C457	OW06-50225-00	E.CAPACITOR	2.2MF 50V	
	C458	OW06-25476-00	E.CAPACITOR	47MF 25V	
	C459	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C463	OW05-03102-06T	C.CAPACITOR	1000PF K102	
	C464	OW05-03102-06T	C.CAPACITOR	1000PF K102	

△	Item	Parts number	Parts name	Remarks	Area
	C470	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C471	OW05-03223-06T	C.CAPACITOR	0.022MF K223	
	C472	OW05-03271-03T	C.CAPACITOR	270PF N271J 500A	
	C473	OW05-03271-03T	C.CAPACITOR	270PF N271J 500A	
	C481	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C482	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C483	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C484	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	C485	OW05-00104-00	C.CAPACITOR	0.1MF 10% 50V	
	D101	OW02-04148-00R	DIODE	IN4148	
	D102	OW02-04148-00R	DIODE	IN4148	
	D103	OW02-04148-00R	DIODE	IN4148	
	D104	OW02-04148-00R	DIODE	IN4148	
	D105	OW02-00348-00	TUNING DIODE	SVC348-S	
	D106	OW02-00201-00	TUNING DIODE	SVC201SPA	
	D107	OW02-00201-00	TUNING DIODE	SVC201SPA	
	D108	OW02-04148-00R	DIODE	IN4148	
	D201	OW02-04148-00R	DIODE	IN4148	
	D202	OW02-04148-00R	DIODE	IN4148	
	D301	OW02-04148-00R	DIODE	IN4148	
	D302	OW02-04148-00R	DIODE	IN4148	
	D303	OW02-04148-00R	DIODE	IN4148	
	D401	OW02-04148-00R	DIODE	IN4148	
	D402	OW02-04148-00R	DIODE	IN4148	
	D403	OW02-04148-00R	DIODE	IN4148	
	D404	OW02-04148-00R	DIODE	IN4148	
	D406	OW02-04148-00R	DIODE	IN4148	
	D408	OW02-04148-00R	DIODE	IN4148	
	IC101	OW03-02104-01	IC	TA2104BN	
	IC102	OW03-09257-01	IC	TC9257F	
	IC201	OW03-01330-00	IC	UPC1330HA	
	IC202	OW03-07312-00	IC	AN7312	
	IC301	OW03-09422-00	IC	TC9422F	
△	IC302	OW03-07812-00	IC	NJM7812A	
	IC401	OW03-04558-03	IC	BA4558N	
	IC402	OW03-01876-00	IC	LM1876TF	
	IC403	OW03-04558-03	IC	BA4558N	
	J456	OW07-25000-60K	CARBON RESISTOR	0 1/16 000JTP	
	L101	OW08-01014-02	IFT	1A1014N	
	L102	OW08-86436-70	AM ANT COIL	OA10-864367	
	L103	OW09-45045-00	FM COIL	D4.5MM 0.8MM	
	L104	OW09-25050-00W	FM COIL	D5MM 0.8MM	
	L105	OW09-70101-00	INDUCTOR	10MH	
	L106	OW09-70101-00	INDUCTOR	10MH	
	L201	OW09-40474-00W	CHOKE COIL	47MH	
	L202	OW09-40474-00W	CHOKE COIL	47MH	
	L203	OW08-07163-00	CHOKE COIL	7L1A63N LIK HANG	
	Q101	OW01-00945-16	TRANSISTOR	2SC945P	
	Q102	OW01-00945-16	TRANSISTOR	2SC945P	
	Q103	OW01-00945-16	TRANSISTOR	2SC945P	
	Q104	OW01-00945-16	TRANSISTOR	2SC945P	
	Q105	OW01-00733-16	TRANSISTOR	2SA733P	
	Q106	OW01-00945-16	TRANSISTOR	2SC945P	
	Q107	OW01-09018-07	TRANSISTOR	9018G	
	Q108	OW01-00945-16	TRANSISTOR	2SC945P	
	Q109	OW01-00945-16	TRANSISTOR	2SC945P	
	Q110	OW01-00945-16	TRANSISTOR	2SC945P	
	Q111	OW01-00945-16	TRANSISTOR	2SC945P	
	Q116	OW01-00945-16	TRANSISTOR	2SC945P	
	Q201	OW01-08050-04S	TRANSISTOR	8050D	
	Q202	OW01-00945-16	TRANSISTOR	2SC945P	
	Q203	OW01-00945-16	TRANSISTOR	2SC945P	
	Q204	OW01-00945-16	TRANSISTOR	2SC945P	

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△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	Q205	OW01-00945-16	TRANSISTOR	2SC945P			R140	OW07-25561-60K	CARBON RESISTOR	560 1/16 561JTP	
	Q206	OW01-08050-04S	TRANSISTOR	8050D			R141	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	Q207	OW01-00945-16	TRANSISTOR	2SC945P			R145	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q208	OW01-00945-16	TRANSISTOR	2SC945P			R146	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q209	OW01-00945-16	TRANSISTOR	2SC945P			R147	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q210	OW01-00945-16	TRANSISTOR	2SC945P			R148	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	Q211	OW01-00733-16	TRANSISTOR	2SA733P			R149	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	Q212	OW01-00945-16	TRANSISTOR	2SC945P			R150	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	Q213	OW01-00945-16	TRANSISTOR	2SC945P			R151	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	Q214	OW01-00945-16	TRANSISTOR	2SC945P			R160	OW07-25183-60K	CARBON RESISTOR	18K 1/16 183JTP	
	Q215	OW01-00945-16	TRANSISTOR	2SC945P			R161	OW07-25183-60K	CARBON RESISTOR	18K 1/16 183JTP	
	Q301	OW01-00945-16	TRANSISTOR	2SC945P			R163	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	Q302	OW01-00945-16	TRANSISTOR	2SC945P			R164	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	Q303	OW01-01383-18	TRANSISTOR	2SC1383R			R165	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP	
	Q304	OW01-00945-16	TRANSISTOR	2SC945P			R201	OW07-25183-60K	CARBON RESISTOR	18K 1/16 183JTP	
	Q305	OW01-01240-00	TRANSISTOR	2SB1240Q			R202	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP	
	Q401	OW01-08050-04S	TRANSISTOR	8050D			R203	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333JTP	
	Q402	OW01-08050-04S	TRANSISTOR	8050D			R204	OW07-25180-60K	CARBON RESISTOR	18 1/16 180JTP	
	Q403	OW01-08050-04S	TRANSISTOR	8050D			R205	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333JTP	
	Q404	OW01-08050-04S	TRANSISTOR	8050D			R206	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	Q405	OW01-00733-16	TRANSISTOR	2SA733P			R207	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	Q406	OW01-00945-16	TRANSISTOR	2SC945P			R208	OW07-25153-60K	CARBON RESISTOR	15K 1/16 153JTP	
	Q407	OW01-00945-16	TRANSISTOR	2SC945P			R209	OW07-25684-60K	CARBON RESISTOR	680K 1/16 684JTP	
	Q410	OW01-08050-04S	TRANSISTOR	8050D			R210	OW07-25153-60K	CARBON RESISTOR	15K 1/16 153JTP	
	Q411	OW01-08550-04B	TRANSISTOR	8550D			R211	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333JTP	
	R101	OW07-15274-50T	CARBON RESISTOR	270K 1/8W 5%			R212	OW07-25823-60K	CARBON RESISTOR	82K 1/16 823JTP	
	R102	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP			R213	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R103	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP			R214	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP	
	R104	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP			R215	OW07-25391-60K	CARBON RESISTOR	390 1/16 391JTP	
	R105	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%			R216	OW07-25683-60K	CARBON RESISTOR	68K 1/16 683JTP	
	R106	OW07-25202-60K	CARBON RESISTOR	2K 1/16 202JTP			R217	OW07-15010-50T	CARBON RESISTOR	1 1/8W 5%	
	R107	OW07-15220-50T	CARBON RESISTOR	22 1/8W 5%			R218	OW07-25273-60K	CARBON RESISTOR	27K 1/16 273JTP	
	R108	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%			R219	OW07-25273-60K	CARBON RESISTOR	27K 1/16 273JTP	
	R109	OW07-15203-50T	CARBON RESISTOR	20K 1/8W 5%			R220	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R110	OW07-25332-60K	CARBON RESISTOR	3.3K 1/16 332JTP			R221	OW07-25221-60K	CARBON RESISTOR	220 1/16 221JTP	
	R111	OW07-25331-60K	CARBON RESISTOR	330 1/8W			R222	OW07-25183-60K	CARBON RESISTOR	18K 1/16 183JTP	
	R113	OW07-25392-60K	CARBON RESISTOR	3.9K 1/16 392JTP			R223	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333JTP	
	R114	OW07-25183-60K	CARBON RESISTOR	18K 1/16 183JTP			R224	OW07-25331-60K	CARBON RESISTOR	330 1/8W	
	R115	OW07-25392-60K	CARBON RESISTOR	3.9K 1/16 392JTP			R225	OW07-15101-26T	CARBON RESISTOR	100 1/4W 5%	
	R116	OW07-25183-60K	CARBON RESISTOR	18K 1/16 183JTP			R226	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP	
	R117	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP			R227	OW07-25180-60K	CARBON RESISTOR	18 1/16 180JTP	
	R118	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP			R228	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R119	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP			R229	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R120	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223JTP			R231	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R121	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%			R232	OW07-25333-60K	CARBON RESISTOR	33K 1/16 333JTP	
	R122	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%			R233	OW07-15221-26T	CARBON RESISTOR	220 1/4W	
	R123	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP			R234	OW07-25153-60K	CARBON RESISTOR	15K 1/16 153JTP	
	R124	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP			R235	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP	
	R125	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%			R236	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R126	OW07-25820-60K	CARBON RESISTOR	82 1/16 820JTP			R237	OW07-25823-60K	CARBON RESISTOR	82K 1/16 823JTP	
	R127	OW07-25332-60K	CARBON RESISTOR	3.3K 1/16 332JTP			R238	OW07-25391-60K	CARBON RESISTOR	390 1/16 391JTP	
	R128	OW07-25563-60K	CARBON RESISTOR	56K 1/16 563JTP			R239	OW07-25683-60K	CARBON RESISTOR	68K 1/16 683JTP	
	R129	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP			R240	OW07-25047-60K	CARBON RESISTOR	4.7 1/16 4R7JTP	
	R130	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP			R241	OW07-25273-60K	CARBON RESISTOR	27K 1/16 273JTP	
	R131	OW07-25105-60K	CARBON RESISTOR	1M 1/16 105JTP			R242	OW07-25100-60K	CARBON RESISTOR	10 1/16 100JTP	
	R132	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%			R243	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R133	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%			R244	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP	
	R134	OW07-25152-60K	CARBON RESISTOR	1.5K 1/16 152JTP			R245	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R135	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP			R246	OW07-25333-60K	CARBON RESISTOR	33K 1/16 33JTP	
	R136	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%			R247	OW07-25103-60K	CARBON RESISTOR	10K 1/16 10JTP	
	R137	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP			R248	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP	
	R138	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP			R249	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R139	OW07-25152-60K	CARBON RESISTOR	1.5K 1/16 152JTP			R250	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223JTP	

■ Electrical parts list (Main board)

Block No. 01

△	Item	Parts number	Parts name	Remarks	Area
	R251	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP	
	R252	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R255	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R256	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP	
	R257	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP	
	R258	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP	
	R301	OW07-15680-50T	CARBON RESISTOR	68 1/8W 5%	
	R302	OW07-25471-60K	CARBON RESISTOR	470 1/16 471JTP	
	R303	OW07-25394-60K	CARBON RESISTOR	390K 1/16 394JTP	
	R304	OW07-25681-60K	CARBON RESISTOR	680 1/16 681JTP	
	R307	OW07-25471-60K	CARBON RESISTOR	470 1/16 471JTP	
	R308	OW07-25394-60K	CARBON RESISTOR	390K 1/16 384JTP	
	R309	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R310	OW07-25681-60K	CARBON RESISTOR	680 1/16 681JTP	
	R312	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R313	OW07-25471-60K	CARBON RESISTOR	470 1/16 471JTP	
	R314	OW07-15100-26T	CARBON RESISTOR	10 1/4W 5%	
	R315	OW07-15561-50T	CARBON RESISTOR	560 1/8W 5%	
	R316	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R317	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP	
	R318	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP	
	R319	OW07-25102-60K	CARBON RESISTOR	1K 1/16 102JTP	
	R351	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP	
	R352	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP	
	R353	OW07-25822-60K	CARBON RESISTOR	8.2K 1/16 822JTP	
	R354	OW07-25822-60K	CARBON RESISTOR	8.2K 1/16 822JTP	
	R401	OW07-15682-26T	CARBON RESISTOR	6.8K 1/4W 5%	
	R402	OW07-25153-60K	CARBON RESISTOR	15K 1/16 153JTP	
	R403	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223JTP	
	R404	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R405	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R406	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R407	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R408	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R409	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R410	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R411	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R412	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223JTP	
	R413	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223JTP	
	R414	OW07-25563-60K	CARBON RESISTOR	56K 1/16 563JTP	
	R415	OW07-25563-60K	CARBON RESISTOR	56K 1/16 563JTP	
	R416	OW07-15102-26T	CARBON RESISTOR	1K 1/4W 5%	
	R417	OW07-15102-26T	CARBON RESISTOR	1K 1/4W 5%	
	R418	OW07-15563-50T	CARBON RESISTOR	56K 1/8W 5%	
	R419	OW07-15563-50T	CARBON RESISTOR	56K 1/8W 5%	
	R420	OW07-15223-00	CARBON RESISTOR	22K 1/4W 5%	
	R421	OW07-15223-00	CARBON RESISTOR	22K 1/4W 5%	
	R422	OW07-15102-26T	CARBON RESISTOR	1K 1/4W 5%	
	R423	OW07-15102-26T	CARBON RESISTOR	1K 1/4W 5%	
	R424	OW07-05047-10	CARBON RESISTOR	4.7 1/2W	
	R425	OW07-05047-10	CARBON RESISTOR	4.7 1/2W	
	R426	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R428	OW07-15682-26T	CARBON RESISTOR	6.8K 1/4W 5%	
	R429	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223JTP	
	R430	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R431	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R432	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R433	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R434	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R435	OW07-25472-60K	CARBON RESISTOR	4.7K 1/16 472JTP	
	R436	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP	
	R437	OW07-25473-60K	CARBON RESISTOR	47K 1/16 473JTP	
	R438	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223JTP	

△	Item	Parts number	Parts name	Remarks	Area
	R439	OW07-25223-60K	CARBON RESISTOR	22K 1/16 223JTP	
	R440	OW07-25152-60K	CARBON RESISTOR	1.5K 1/16 152JTP	
	R441	OW07-25152-60K	CARBON RESISTOR	1.5K 1/16 152JTP	
	R442	OW07-25221-60K	CARBON RESISTOR	220 1/16 221JTP	
	R443	OW07-25221-60K	CARBON RESISTOR	220 1/16 221JTP	
	R446	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP	
	R447	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R448	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP	
	R449	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R450	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R451	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R458	OW07-15181-01T	CARBON RESISTOR	180 1/4W 5%	
	R459	OW07-25122-60K	CARBON RESISTOR	1.2K 1/16 122JTP	
	R463	OW07-15181-01T	CARBON RESISTOR	180 1/4W 5%	
	R464	OW07-25122-60K	CARBON RESISTOR	1.2K 1/16 122JTP	
	R482	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R483	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R484	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	R485	OW07-25104-60K	CARBON RESISTOR	100K 1/16 104JTP	
	R486	OW07-25103-60K	CARBON RESISTOR	10K 1/16 103JTP	
	TC101	OW05-08100-03	TRIM CAPACITOR	10PF 3PIN	
	TC102	OW05-08100-03	TRIM CAPACITOR	10PF 3PIN	
	T101	OW08-00332-24C	IFT YEL	10MM 810017 COILS	
	X101	OW04-07200-05	CRYSTAL	7.2MHZ HC-49U 30PPM	
	Z101	OW02-50100-00	ZENER DIODE	10V 0.5W	
	Z301	OW02-50091-00	ZENER DIODE	9.1V 0.5W	
△	Z401	OW02-50180-00	ZENER DIODE	18V 0.5W	
△	Z402	OW02-50180-00	ZENER DIODE	18V 0.5W	

■ Electrical parts list (CD&MCU board)

Block No. 02

△	Item	Parts number	Parts name	Remarks	Area	△	Item	Parts number	Parts name	Remarks	Area
	CN601	OW20-21100-00	CONNECTOR	P=2MM 10PIN			C726	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	CN602	OW20-21080-00	CONNECTOR	P=2MM 8PIN			C727	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	CN603	OW20-21030-00	CONNECTOR	P=2MM 3PIN			C728	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	CN604	OW20-41092-43	CONNECTOR	P=2MM 9PIN			C729	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	CN607	OW20-11060-00	CONNECTOR	P=2MM 6PIN			C730	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	CN608	OW20-21030-00	CONNECTOR	P=2MM 3PIN			C731	OW05-07473-82B	C.CAPACITOR	0.047MF	
	CN609	OW20-42032-13	CONNECTOR	P=2.5MM 3PIN			C732	OW05-07473-82B	C.CAPACITOR	0.047MF	
	CN701	OW20-12020-00	CONNECTOR	P=2.5MM 2PIN			C733	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	CN702	OW20-21020-00	CONNECTOR	P=2MM 2PIN			C736	OW05-07153-00	C.CAPACITOR	0.015MF	
	CN703	OW20-21060-00	CONNECTOR	P=2MM 6PIN			C737	OW05-07103-20A	C.CAPACITOR	0.01MF	
	CN704	OW20-80160-00I	CONNECTOR	P=1MM 16PIN			C738	OW05-07470-00A	C.CAPACITOR	47PF	
	C601	OW06-10477-00	E.CAPACITOR	470MF 10V			C739	OW05-07272-00	C.CAPACITOR	0.0027MF 50V 10%	
	C602	OW06-10108-00	E.CAPACITOR	1000MF 10V			C740	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C602A	OW05-07104-82B	C.CAPACITOR	0.1MF 50V			C741	OW05-02472-10	M.CAPACITOR	0.0047MF 10%	
	C603	OW06-10227-00S	E.CAPACITOR	220MF 10V			C742	OW05-07471-10A	C.CAPACITOR	470PF	
	C605	OW05-07104-82B	C.CAPACITOR	0.1MF 50V			C743	OW05-07471-10A	C.CAPACITOR	470PF	
	C606	OW05-07250-06T	C.CAPACITOR	25PF			C744	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C607	OW05-07250-06T	C.CAPACITOR	25PF			C746	OW05-02472-10	M.CAPACITOR	0.0047MF 10%	
	C608	OW05-07250-06T	C.CAPACITOR	25PF			C747	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C609	OW05-07250-06T	C.CAPACITOR	25PF			C748	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C610	OW06-10107-00S	E.CAPACITOR	100MF 10V			C749	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C611	OW06-10107-00S	E.CAPACITOR	100MF 10V			C753	OW06-10227-02	E.CAPACITOR	220MF 10V	
	C612	OW06-10476-00S	E.CAPACITOR	47MF 10V			C754	OW06-10227-02	E.CAPACITOR	220MF 10V	
	C613	OW06-10107-00S	E.CAPACITOR	100MF 10V			C761	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C614	OW05-07104-82B	C.CAPACITOR	0.1MF 50V			C762	OW06-10106-02	E.CAPACITOR	10MF 10V	
	C615	OW06-50225-02	E.CAPACITOR	2.2MF 50V			C763	OW06-50225-02	E.CAPACITOR	2.2MF 50V	
	C616	OW05-07271-10T	C.CAPACITOR	270PF 10%			C765	OW05-07103-20A	C.CAPACITOR	0.01MF	
	C617	OW05-07561-05	C.CAPACITOR	560PF NPO 5%			C766	OW05-07103-20A	C.CAPACITOR	0.01MF	
	C618	OW06-10107-00S	E.CAPACITOR	100MF 10V			C771	OW05-00560-06	C.CAPACITOR	56PF 5%	
	C619	OW05-07330-06T	C.CAPACITOR	33PF			C772	OW05-07224-00	C.CAPACITOR	0.22MF	
	C620	OW05-07330-06T	C.CAPACITOR	33PF			C773	OW05-07224-00	C.CAPACITOR	0.22MF	
	C621	OW06-10107-00S	E.CAPACITOR	100MF 10V			C774	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C622	OW06-10106-02	E.CAPACITOR	10MF 10V			C775	OW05-07082-10A	C.CAPACITOR	8.2PF	
	C630	OW05-07102-10A	C.CAPACITOR	1000PF			C776	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C641	OW06-10107-02	E.CAPACITOR	100MF 10V			C777	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C642	OW06-10476-02	E.CAPACITOR	47MF 10V			C778	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C643	OW06-16226-02	E.CAPACITOR	22MF 16V			C779	OW06-10107-02	E.CAPACITOR	100MF 10V	
	C646	OW05-07104-82B	C.CAPACITOR	0.1MF 50V			C780	OW06-10476-02	E.CAPACITOR	47MF 10V	
	C648	OW05-07223-82A	C.CAPACITOR	0.022MF			C781	OW05-07473-82B	C.CAPACITOR	0.047MF	
	C701	OW05-07103-20A	C.CAPACITOR	0.01MF			C790	OW06-16228-00	E.CAPACITOR	2200MF 16V	
	C702	OW05-07104-82B	C.CAPACITOR	0.1MF 50V			C791	OW05-07104-82B	C.CAPACITOR	0.1MF 50V	
	C703	OW05-07223-82A	C.CAPACITOR	0.022MF			D601	OW02-04148-00R	DIODE	IN4148	
	C704	OW06-10227-00S	E.CAPACITOR	220MF 10V			D602	OW02-04148-00R	DIODE	IN4148	
	C705	OW06-10477-00	E.CAPACITOR	470MF 10V			D603	OW02-04148-00R	DIODE	IN4148	
	C706	OW06-10106-00	E.CAPACITOR	10MF 10V			D604	OW02-04148-00R	DIODE	IN4148	
	C707	OW06-10106-00	E.CAPACITOR	10MF 10V			D605	OW02-50091-00	ZENER DIODE	9.1V 0.5W	
	C708	OW05-07222-82A	C.CAPACITOR	2200PF			D606	OW02-50062-00	ZENER DIODE	6.2V 0.5W	
	C709	OW06-10476-02	E.CAPACITOR	47MF 10V			D608	OW02-04148-00R	DIODE	IN4148	
	C710	OW06-10226-02	E.CAPACITOR	22MF 10V			D609	OW02-50062-00	ZENER DIODE	6.2V 0.5W	
	C711	OW05-07222-82A	C.CAPACITOR	2200PF			D610	OW02-04001-00	DIODE	1N4001	
	C712	OW05-07473-82B	C.CAPACITOR	0.047MF			D611	OW02-04148-00R	DIODE	IN4148	
	C713	OW06-10476-00S	E.CAPACITOR	47MF 10V			D702	OW02-50056-00	ZENER DIODE	5.6V 0.5W	
	C714	OW06-10105-02	E.CAPACITOR	1MF 10V			D703	OW02-50062-00	ZENER DIODE	6.2V 0.5W	
	C716	OW05-07473-82B	C.CAPACITOR	0.047MF			D704	OW02-04148-00R	DIODE	IN4148	
	C717	OW05-07150-06T	C.CAPACITOR	15PF			D705	OW02-04148-00R	DIODE	IN4148	
	C718	OW05-07150-06T	C.CAPACITOR	15PF			IC601	OW03-87261-15	IC	TMP87EP26F-1J15	
	C719	OW06-10476-00S	E.CAPACITOR	47MF 10V			IC602	OW03-01924-00	IC	BU1924F	
	C720	OW05-07473-82B	C.CAPACITOR	0.047MF			IC701	OW03-09462-00	IC	TC9462F	
	C721	OW05-07473-82B	C.CAPACITOR	0.047MF			IC702	OW03-07291-00 T	IC	TA7291S	
	C722	OW06-10476-00S	E.CAPACITOR	47MF 10V			IC703	OW03-02092-00 T	IC	TA2092N	
	C723	OW06-10476-00S	E.CAPACITOR	47MF 10V			IC704	OW03-02153-00 T	IC	TA2153FN	
	C724	OW06-16337-00	E.CAPACITOR	330MF 16V			L601	OW09-70102-00C	INDUCTOR	100MH	
	C725	OW05-07104-82B	C.CAPACITOR	0.1MF 50V			L602	OW09-70102-00C	INDUCTOR	100MH	

■ Electrical parts list (CD&MCU board)

Block No. 02

△	Item	Parts number	Parts name	Remarks	Area
	L603	OW09-70102-00C	INDUCTOR	100MH	
	L604	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L605	OW09-70102-00C	INDUCTOR	100MH	
	L606	OW09-70102-00C	INDUCTOR	100MH	
	L607	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L608	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L701	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L702	OW08-01122-00	FERRITE BEAD	RH03509ST-B246	
	L703	OW09-70101-00	INDUCTOR	10MH	
	L704	OW09-70101-00	INDUCTOR	10MH	
	L705	OW09-70102-00C	INDUCTOR	100MH	
	Q601	OW01-00945-16	TRANSISTOR	2SC945P	
	Q603	OW01-00882-00	TRANSISTOR	2SD882Q	
	Q604	OW01-01240-00	TRANSISTOR	2SB1240Q	
	Q605	OW01-00945-16	TRANSISTOR	2SC945P	
	Q606	OW01-08050-04S	TRANSISTOR	8050D	
	Q607	OW01-01383-18	TRANSISTOR	2SC1383R	
	Q610	OW01-08050-04S	TRANSISTOR	8050D	
	Q701	OW01-00945-16	TRANSISTOR	2SC945P	
	Q702	OW01-00945-16	TRANSISTOR	2SC945P	
	Q703	OW01-00733-16	TRANSISTOR	2SA733P	
	Q704	OW01-01383-18	TRANSISTOR	2SC1383R	
	Q705	OW01-00733-16	TRANSISTOR	2SA733P	
	Q707	OW01-00733-16	TRANSISTOR	2SA733P	
	Q708	OW01-00945-16	TRANSISTOR	2SC945P	
	Q709	OW01-00945-16	TRANSISTOR	2SC945P	
	Q791	OW01-01240-00	TRANSISTOR	2SB1240Q	
	Q792	OW01-00945-16	TRANSISTOR	2SC945P	
	R602	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R603	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R604	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R605	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R606	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R607	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R608	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R609	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R610	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R612	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R616	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R617	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R618	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R620	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R622	OW07-05022-10	CARBON RESISTOR	2.2 1/2W	
	R623	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R624	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R625	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R626	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R627	OW07-15122-50T	CARBON RESISTOR	1.2K 1/8W 5%	
	R628	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R630	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R631	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R632	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R633	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R634	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R635	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R636	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R637	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R641	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R643	OW07-15682-50T	CARBON RESISTOR	6.8K 1/8W 5%	
	R644	OW07-15682-50T	CARBON RESISTOR	6.8K 1/8W 5%	
	R645	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R646	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R647	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	

△	Item	Parts number	Parts name	Remarks	Area
	R648	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R649	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R650	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R651	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R652	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R653	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R701	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R702	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R703	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R704	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R705	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R706	OW07-15271-50T	CARBON RESISTOR	270 1/8W 5%	
	R707	OW07-15271-50T	CARBON RESISTOR	270 1/8W 5%	
	R708	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R709	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R710	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R711	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R712	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R713	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R714	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R715	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R716	OW07-15561-50T	CARBON RESISTOR	560 1/8W 5%	
	R717	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R721	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R722	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R723	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R724	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R725	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R726	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R727	OW07-15332-50T	CARBON RESISTOR	3.3K 1/8W 5%	
	R729	OW07-15224-50T	CARBON RESISTOR	220K 1/8W 5%	
	R730	OW07-15683-50T	CARBON RESISTOR	68K 1/8W 5%	
	R731	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R732	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R733	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R735	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R736	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R737	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R738	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R739	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R742	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R743	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%	
	R744	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R745	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R746	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R747	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R748	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%	
	R750	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R751	OW07-15561-00	CARBON RESISTOR	560 1/4W 5%	
	R752	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R753	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R754	OW07-05082-10	CARBON RESISTOR	8.2 1/2W	
	R755	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R757	OW07-15562-50T	CARBON RESISTOR	5.6K 1/8W 5%	
	R758	OW07-15104-50T	CARBON RESISTOR	100K 1/8W 5%	
	R759	OW07-15512-50T	CARBON RESISTOR	5.1K 1/8W 5%	
	R760	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R761	OW07-15562-50T	CARBON RESISTOR	5.6K 1/8W 5%	
	R762	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R763	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R764	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R781	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R782	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	

■ Electrical parts list (CD&MCU board)

Block No. 02

△	Item	Parts number	Parts name	Remarks	Area
	R783	OW07-15222-50T	CARBON RESISTOR	2.2K 1/8W 5%	
	R784	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R785	OW07-15221-50T	CARBON RESISTOR	220 1/8W 5%	
	R786	OW07-15683-50T	CARBON RESISTOR	68K 1/8W 5%	
	R789	OW07-15683-50T	CARBON RESISTOR	68K 1/8W 5%	
	R790	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R791	OW07-15223-50T	CARBON RESISTOR	22K 1/8W 5%	
	R792	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R793	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R794	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	X601	OW04-07200-00H	CRYSTAL	7.2MHZ HC-49S	
	X602	OW04-32768-03S	CRYSTAL	32.768KHZ	
	X603	OW04-04332-01N	CRYSTAL	4.332MHZ 49U-NEW	
	X701	OW04-16934-41M	CRYSTAL	16.9344MHZ	

■ Electrical parts list (Power board) Block No. 03

△	Item	Parts number	Parts name	Remarks	Area
	CN403	OW20-21040-00	CONNECTOR HEAD	P=2MM 4PIN	
	CN705	OW20-41022-25	CONNECTOR HOUG	P=2MM 2PIN	
	CN901	OW20-12050-00	CONNECTOR HEAD	P=2.5MM 5PIN	
	CN902	OW20-12030-00	CONNECTOR HEAD	P=2.5MM 3PIN	
	CN903	OW20-42021-48	CONNECTOR HOUG	P=2.5MM 2PIN	
△	C901	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C902	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C903	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C904	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	B E,EN,EV E,EN,EV B B E,EN,EV E,EN,EV B
△	C905	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C906	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C907	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C908	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C909	OW05-00104-00	C.CAPACITOR	0.1MF 50V 10%	
△	C909	OW05-00104-01	C.CAPACITOR	0.1MF 100V 10%	
△	C910	OW05-00104-01	C.CAPACITOR	0.1MF 100V 10%	
△	C910	OW05-00104-00	C.CAPACITOR	0.1MF 50V 10%	
△	C911	OW05-00104-00	C.CAPACITOR	0.1MF 50V 10%	
△	C911	OW05-00104-01	C.CAPACITOR	0.1MF 100V 10%	
△	C912	OW05-00104-01	C.CAPACITOR	0.1MF 100V 10%	
△	C912	OW05-00104-00	C.CAPACITOR	0.1MF 50V 10%	
△	C913	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C914	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C915	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C916	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	C917	OW06-16477-00	E.CAPACITOR	470MF 16V	
△	C918	OW06-25477-00	E.CAPACITOR	470MF 25V	
△	C919	OW06-35477-00	E.CAPACITOR	470MF 35V	
△	C920	OW06-35477-00	E.CAPACITOR	470MF 35V	
△	C921	OW06-25477-00	E.CAPACITOR	470MF 25V	
	C922	OW06-16336-00	E.CAPACITOR	33MF 16V	
	C923	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
	C924	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
	C925	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
△	D901	OW02-04001-00	DIODE	1N4001	
△	D902	OW02-04001-00	DIODE	1N4001	
△	D903	OW02-04001-00	DIODE	1N4001	
△	D904	OW02-04001-00	DIODE	1N4001	
△	D905	OW02-04001-00	DIODE	1N4001	
△	D906	OW02-04001-00	DIODE	1N4001	
△	D907	OW02-04001-00	DIODE	1N4001	
△	D908	OW02-04001-00	DIODE	1N4001	
△	D909	OW02-05402-00	DIODE	IN5402-F	
△	D910	OW02-05402-00	DIODE	IN5402-F	
△	D911	OW02-05402-00	DIODE	IN5402-F	
△	D912	OW02-05402-00	DIODE	IN5402-F	
△	D913	OW02-04001-00	DIODE	1N4001	
△	D914	OW02-04001-00	DIODE	1N4001	
△	D915	OW02-04001-00	DIODE	1N4001	
△	D916	OW02-04001-00	DIODE	1N4001	
	D917	OW02-04001-00	DIODE	1N4001	
	D918	OW02-04148-00R	DIODE	IN4148	
△	F901	OW33-57162-02	FUSE	1.6A 250V	
△	F902	OW33-57252-02	FUSE	2.5A 250V	
△	F903	OW33-57252-02	FUSE	2.5A 250V	
△	F904	OW33-57162-02	FUSE	1.6A 250V	
	HF901	OW39-10001-00A	FUSE HOLDER		
	HF902	OW39-10001-00A	FUSE HOLDER		
	HF903	OW39-10001-00A	FUSE HOLDER		
	HF904	OW39-10001-00A	FUSE HOLDER		
	JK401	OW12-00035-42	PHONE JACK	MSJ-0350-10AB	
	Q901	OW01-00733-16	TRANSISTOR	2SA733P	
	Q902	OW01-00945-16	TRANSISTOR	2SC945P	

△	Item	Parts number	Parts name	Remarks	Area
△	RL901	OW16-50105-00	RELAY SWITCH	OJ-SH-105LM	
	R901	OW07-15472-50T	CARBON RESISTOR	4.7K 1/8W 5%	
	R902	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R903	OW07-15473-50T	CARBON RESISTOR	47K 1/8W 5%	
	R904	OW07-15152-50T	CARBON RESISTOR	1.5K 1/8W 5%	
	R905	OW07-15680-26T	CARBON RESISTOR	68 1/4W 5%	
△	TR901	OW15-80005-00	TRANSFORMER	T05875A	
△	TR902	OW15-80003-01	TRANSFORMER	T28-012200500	

■ Electrical parts list (Key board)

Block No. 04

△	Item	Parts number	Parts name	Remarks	Area
	CN103	OW20-12020-01K	CONNECTOR HEADE	P=2.5MM 2PIN	
	CN104	OW20-42032-17	CONNECTOR HOUG	P=2.5MM 3PIN	
	CN801	OW20-41032-17	CONNECTOR HOUG	P=2MM 3PIN	
	CN802	OW20-41062-26	CONNECTOR HOUG	P=2MM 6PIN	
	C801	OW06-10476-00S	E.CAPACITOR	47MF 10V	
	C802	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
	C803	OW05-00203-82	C.CAPACITOR	0.02MF +80/-20%	
	D801	OW02-30004-07	LED	BLUE 31B4SCB04	
	D802	OW02-30004-07	LED	BLUE 31B4SCB04	
	D804	OW02-50000-10D	LED	RED/GRN	
	D805	OW02-50000-10D	LED	RED/GRN	
	D806	OW02-50000-10D	LED	RED/GRN	
	D807	OW02-04148-00R	DIODE	IN4148	
	D808	OW02-04148-00R	DIODE	IN4148	
	D809	OW02-04148-00R	DIODE	IN4148	
	D810	OW02-04148-00R	DIODE	IN4148	
	LED	OW25-23070-02K	CONNECTOR	UL2651 2PIN	
	Q801	OW01-00945-16	TRANSISTOR	2SC945P	
	Q802	OW01-00733-16	TRANSISTOR	2SA733P	
	Q803	OW01-00945-16	TRANSISTOR	2SC945P	
	Q804	OW01-00733-16	TRANSISTOR	2SA733P	
	Q805	OW01-00945-16	TRANSISTOR	2SC945P	
	Q806	OW01-00733-16	TRANSISTOR	2SA733P	
	R801	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R802	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R803	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R804	OW07-15121-50T	CARBON RESISTOR	120 1/8W 5%	
	R805	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R806	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R807	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R808	OW07-15121-50T	CARBON RESISTOR	120 1/8W 5%	
	R809	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R810	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R811	OW07-15121-50T	CARBON RESISTOR	120 1/8W 5%	
	R812	OW07-15101-50T	CARBON RESISTOR	100 1/8W 5%	
	R813	OW07-15750-50T	CARBON RESISTOR	75 1/8W 5%	
	R814	OW07-15471-50T	CARBON RESISTOR	470 1/8W 5%	
	R815	OW07-15152-50T	CARBON RESISTOR	1.5K 1/8W 5%	
	R816	OW07-15102-50T	CARBON RESISTOR	1K 1/8W 5%	
	R817	OW07-15272-50T	CARBON RESISTOR	2.7K 1/8W 5%	
	R818	OW07-15562-50T	CARBON RESISTOR	5.6K 1/8W 5%	
	R819	OW07-15682-50T	CARBON RESISTOR	6.8K 1/8W 5%	
	R820	OW07-15333-50T	CARBON RESISTOR	33K 1/8W 5%	
	R821	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	
	R822	OW07-15823-50T	CARBON RESISTOR	82K 1/8W 5%	
	R823	OW07-15750-50T	CARBON RESISTOR	75 1/8W 5%	
	R824	OW07-15471-50T	CARBON RESISTOR	470 1/8W 5%	
	R825	OW07-15681-50T	CARBON RESISTOR	680 1/8W 5%	
	R826	OW07-15182-50T	CARBON RESISTOR	1.8K 1/8W 5%	
	R827	OW07-15912-50T	CARBON RESISTOR	9.1K 1/8W 5%	
	R828	OW07-15392-50T	CARBON RESISTOR	3.9K 1/8W 5%	
	R829	OW07-15822-50T	CARBON RESISTOR	8.2K 1/8W 5%	
	R830	OW07-15153-50T	CARBON RESISTOR	15K 1/8W 5%	
	R831	OW07-15273-50T	CARBON RESISTOR	27K 1/8W 5%	
	R832	OW07-15823-50T	CARBON RESISTOR	82K 1/8W 5%	
	R833	OW07-15100-50T	CARBON RESISTOR	10 1/8W 5%	
	R834	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R835	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R836	OW07-15103-50T	CARBON RESISTOR	10K 1/8W 5%	
	R837	OW07-15560-50T	CARBON RESISTOR	56 1/8W 5%	
	SE801	OW02-67138-00	SENSOR	RPM7138-V4	
	SW801	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW802	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	

△	Item	Parts number	Parts name	Remarks	Area
	SW803	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW804	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW805	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW806	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW807	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW808	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW809	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW810	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW811	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW812	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW813	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW814	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW815	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW816	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW817	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW818	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW819	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	
	SW820	OW16-10101-08S	TACT SWITCH	EVQJAE05R H=5MM	

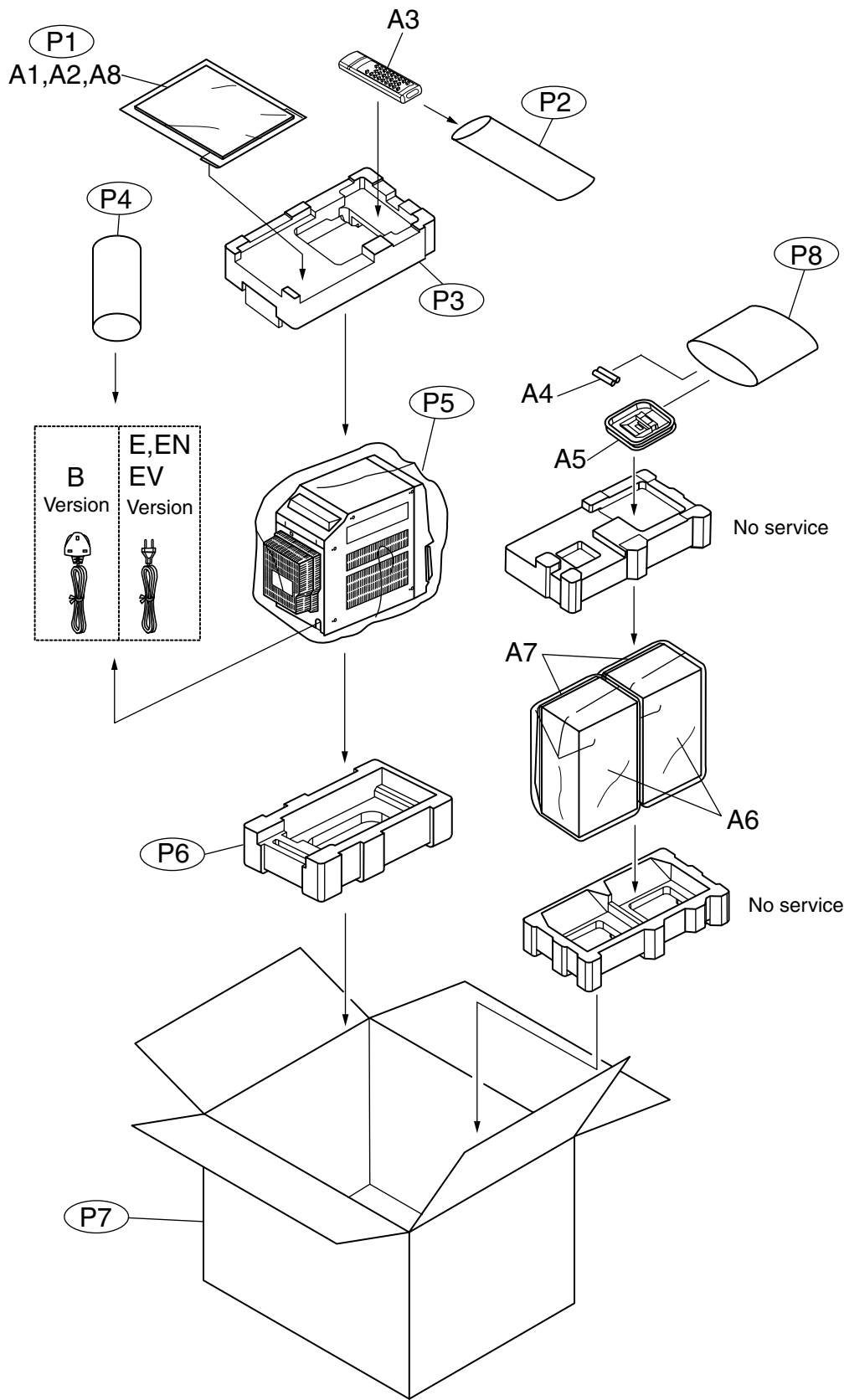
Packing materials and accessories parts list

Block No.

M	3	M	M
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Block No.

M	5	M	M
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■ Parts list (Packing)

Block No. M3MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	P1	OW85-91014-02	POLY BAG	1	INSTRUCTIONS	
	P2	OW85-00025-01A	POLY BAG	1	REMOTE UNIT	
	P3	OW86-50000-00	POLY FOAM	1	TOP	
	P4	OW90-00018-00	POLY BAG	1	AC POWER COARD	
	P5	OW85-92224-04	POLY BAG	1	SET	
	P6	OW86-50000-01	POLY FOAM	1	BOTTOM	
	P7	OW83-30000-12	GIFT BOX	1		
	P8	OW85-90710-04	POLY BAG	1		

■ Parts list (Accessories)

Block No. M5MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	A1	OW88-50000-51	INSTRUCTIONS	1	SWE,FIN,CZE	EN
		OW88-50000-51	INSTRUCTIONS	1	GER,FRE,SPA,ITA	EN
		OW88-50000-49	INSTRUCTIONS	1	ENG	B
		OW88-50000-47	INSTRUCTIONS	1	RUS,POL,HUN,CZE	EV
		OW88-50000-40	INSTRUCTIONS	1	GER,FRE,DUT	E
	A2	OW88-50000-58	WARRANTY CARD	1	BT-54008-3	
	A3	OWV-RE-JVC	REMOTE UNIT	1	RM-SUXM5R	
	A4	-----	BATTERY	2		
	A5	OW23-04910-02	AM ANT LOOP	1	4910 L=1M W/JST	
	A6	OW00-50000-00	SPEAKER BOX	2		
	A7	OW55-50000-00	SPK NET ASSY	2		

JVC

SCHEMATIC DIAGRAMS

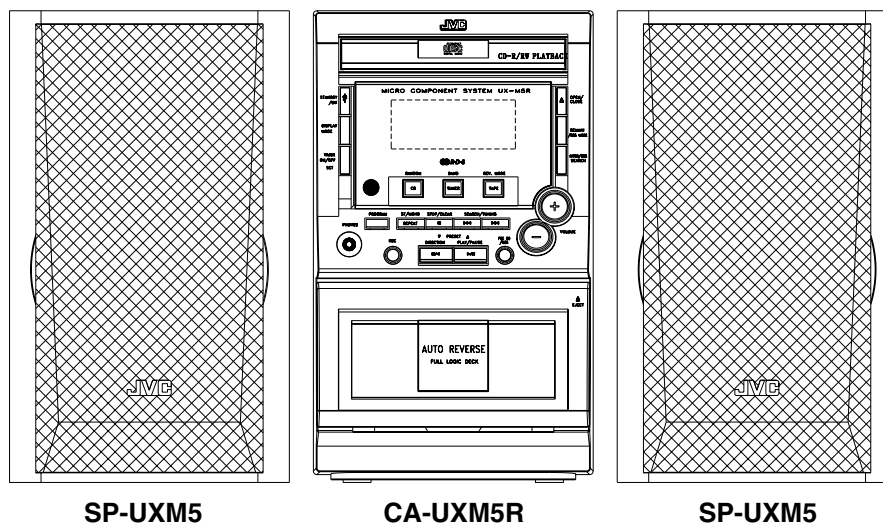
MICRO COMPONENT SYSTEM

UX-M5R

CD-ROM No.SML200207

Area suffix

B ----- U.K.
 E ----- Continental Europe
 EN ----- Northern Europe
 EV ----- Eastern Europe



COMPACT
 disc
 DIGITAL AUDIO

Contents

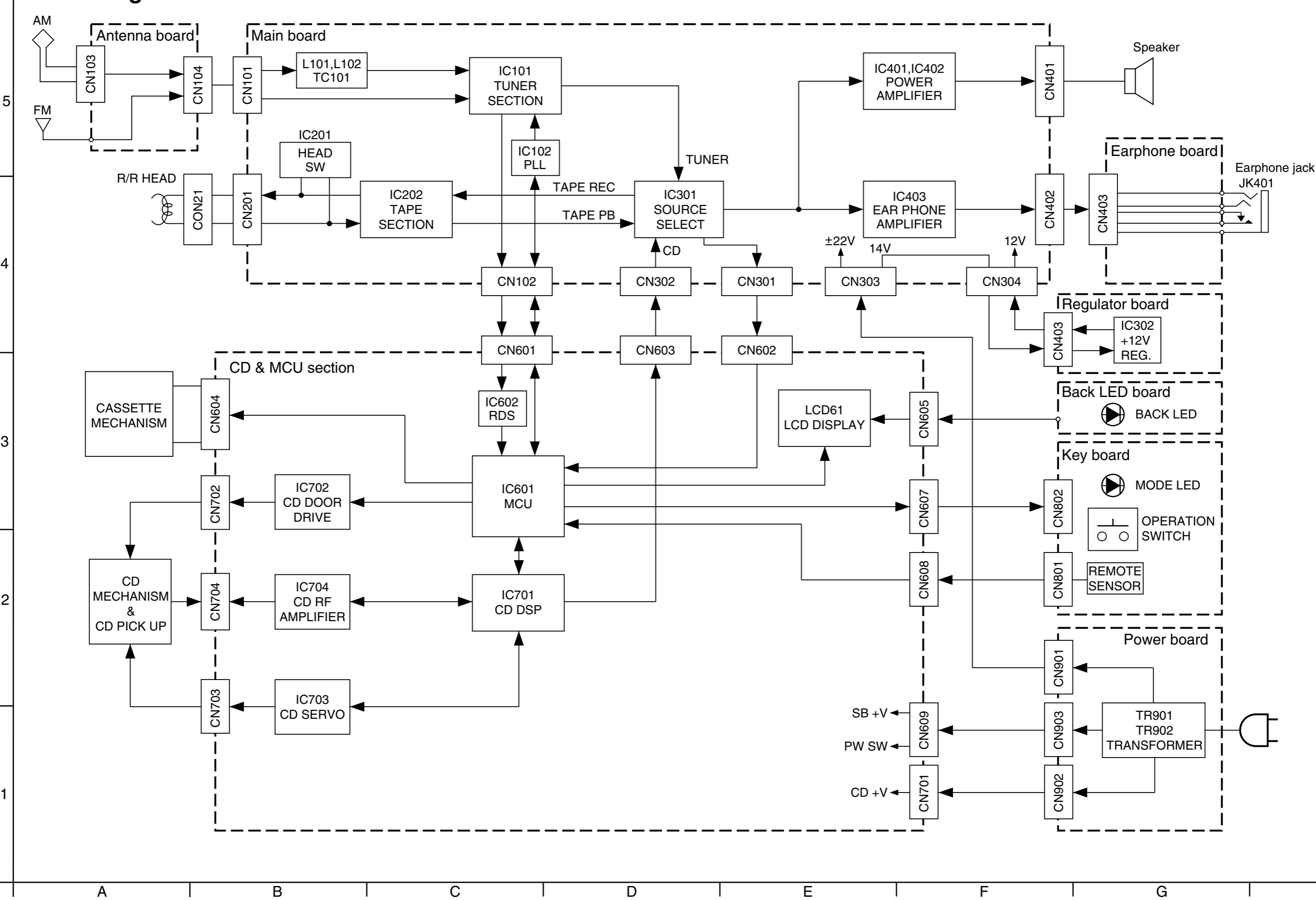
Block diagram	2-1
Standard schematic diagrams	2-2
Printed circuit boards	2-5 ~ 6

UX-M5R

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (■), diode (▬) and ICP (●) or identified by the "△" mark nearby are critical for safety.

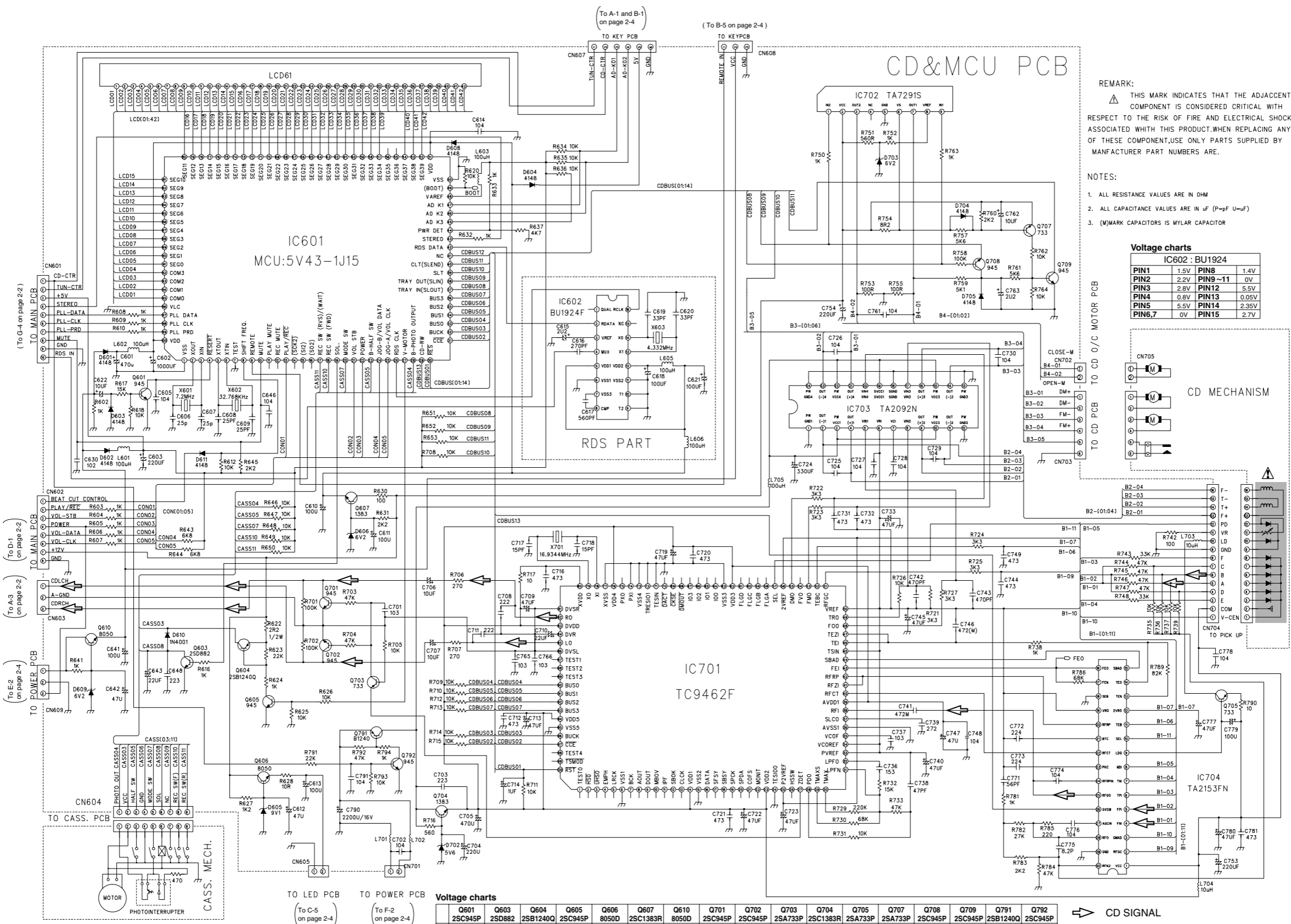
(This regulation does not correspond to J and C version.)

Block diagram



CD & MCU section

5
4
3
2
1



REMARK:
THIS MARK INDICATES THAT THE ADJACENT COMPONENT IS CONSIDERED CRITICAL WITH RESPECT TO THE RISK OF FIRE AND ELECTRICAL SHOCK ASSOCIATED WITH THIS PRODUCT. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY PARTS SUPPLIED BY MANUFACTURER PART NUMBERS ARE.

- NOTES:
1. ALL RESISTANCE VALUES ARE IN OHM
 2. ALL CAPACITANCE VALUES ARE IN uF (p=pF u=uF)
 3. (M) MARK CAPACITORS IS MYLAR CAPACITOR

Voltage charts

IC602 : BU1924

PIN1	1.5V	PIN8	1.4V
PIN2	2.2V	PIN9~11	0V
PIN3	2.8V	PIN12	5.5V
PIN4	0.8V	PIN13	0.05V
PIN5	5.5V	PIN14	2.35V
PIN6,7	0V	PIN15	2.7V

Voltage charts

IC601 : 87EP26F-1J15

PIN1	0V	PIN30	4.93V
PIN2	2.38V	PIN31	4.02V
PIN3	2.03V	PIN32	4.57V
PIN4	0.02V	PIN33	4.7V
PIN5	2.22V	PIN34	4.65V
PIN6	1.64V	PIN35	4.53V
PIN7	0V	PIN36	0V
PIN8	0.04V	PIN37,38	0.04V
PIN9	5.47V	PIN39,40	4.74V
PIN10	0.06V	PIN41,42	0.01V
PIN11	4.78V	PIN43	0V
PIN12	4.78V	PIN44	3.98V
PIN13	4.75V	PIN45~48	4.74V
PIN14~16	0V	PIN49,50	0V
PIN17,18	4.74V	PIN51	4.78V
PIN19	0.05V	PIN52	2.38V
PIN20	4.74V	PIN53	0.01V
PIN21	0.01V	PIN54~58	2.38V
PIN22	4.65V	PIN59	2.37V
PIN23	4.74V	PIN60~95	2.38V
PIN24,25	0.06V	PIN96	0V
PIN26,27	0.01V	PIN97	0.04V
PIN28	4.74V	PIN98,99	4.72V
PIN29	4.77V	PIN100	4.76V

IC701 : TA9462F

PIN1~3	4.9V	PIN53	2.0V
PIN4	0V	PIN54	2.1V
PIN5	1.2V	PIN55	2.3V
PIN6	0V	PIN56	4.2V
PIN7	2.8V	PIN57	2.4V
PIN8~11	0V	PIN58	0V
PIN12	3.5V	PIN59	4.9V
PIN13	0.6V	PIN60	0V
PIN14	4.9V	PIN61	4.9V
PIN15,16	0V	PIN62	4.93V
PIN17	2.2V	PIN63	0V
PIN18	0V	PIN64	0.95V
PIN19	2.5V	PIN65~67	0.96V
PIN20	0.5V	PIN68~70	4.9V
PIN21	1.6V	PIN71~74	0V
PIN22	0V	PIN75,76	4.93V
PIN23	4.9V	PIN77	0V
PIN24	0V	PIN78	2V
PIN25	4.2V	PIN79	2.48V
PIN26,27	2.1V	PIN80	4.89V
PIN28	0V	PIN81	0V
PIN29	2.0V	PIN82	2.7V
PIN30	2.1V	PIN83	5V
PIN31	2.1V	PIN84	2.7V
PIN32	2V	PIN85	2.5V
PIN33,34	2.1V	PIN86	0V
PIN35	1.5V	PIN87~89	4.15V
PIN36	0V	PIN90,91	4.6V
PIN37,38	2.1V	PIN92	4.5V
PIN39	4.9V	PIN93	4.6V
PIN40~42	1.9V	PIN94	5V
PIN43	2V	PIN95	0V
PIN44	1.9V	PIN96	4.25V
PIN45~50	2.1V	PIN97	4.1V
PIN51	3.2V	PIN98,99	4.15V
PIN52	2.3V	PIN100	4.9V

IC702 : TA7291S

PIN1	0V	PIN7	0V
PIN2	12.1V	PIN8	6.1V
PIN3~5	0V	PIN9	0V
PIN6	12.1V		

IC703 : TA2092

PIN1	0V	PIN13	0V
PIN2	3V	PIN14	3.7V
PIN3	8.3V	PIN15	8.3V
PIN4	4.6V	PIN16	3.9V
PIN5	2.4V	PIN17	2.1V
PIN6	8V	PIN18	3.9V
PIN7	0V	PIN19	2.1V
PIN8	2V	PIN20	2.1V
PIN9	3.8V	PIN21	3.8V
PIN10	8.3V	PIN22	8V
PIN11	3.8V	PIN23	8V
PIN12	0V	PIN24	0V

IC704 : TA2153

PIN1	4.8V	PIN18	0V
PIN2	3.2V	PIN19	2.1V
PIN3~7	2.1V	PIN20	1.8V
PIN8	0.1V	PIN21	2.6V
PIN9	3.9V	PIN22	1.8V
PIN10	2.4V	PIN23	1.2V
PIN11	2.3V	PIN24	2.1V
PIN12	4.2V	PIN25	1.9V
PIN13	2.1V	PIN26	4.7V
PIN14	2.1V	PIN27	2.1V
PIN15	1.9V	PIN28	2.6V
PIN16	2V	PIN29	2.5V
PIN17	2.1V	PIN30	2.1V

CD SIGNAL

Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

Voltage charts

	Q601	Q603	Q604	Q605	Q606	Q607	Q610	Q701	Q702	Q703	Q704	Q705	Q707	Q708	Q709	Q791	Q792
2SC945P	2SD882	2SB1240Q	2SC945P	8050D	2SC1383R	8050D	2SC945P	2SA733P	2SA733P	2SA733P	2SA733P	2SA733P	2SA733P	2SC945P	2SC945P	2SB1240Q	2SC945P
E	0V	0V	12.5V	0V	8.5V	5.6V	5.6V	0V	0V	0V	5V	4.8V	12.5V	0V	0V	9.8V	0V
B	0V	0V	12V	0V	9.1V	6.2V	6.2V	0V	0V	0V	5.7V	4V	12V	0V	0V	9.1V	0.65V
C	1V	0V	0V	12V	12.5V	9.2V	9.6V	0V	0V	0V	9.6V	1.8V	0V	0V	4.6V	9.8V	0.1V

■ Key section

■ Power section

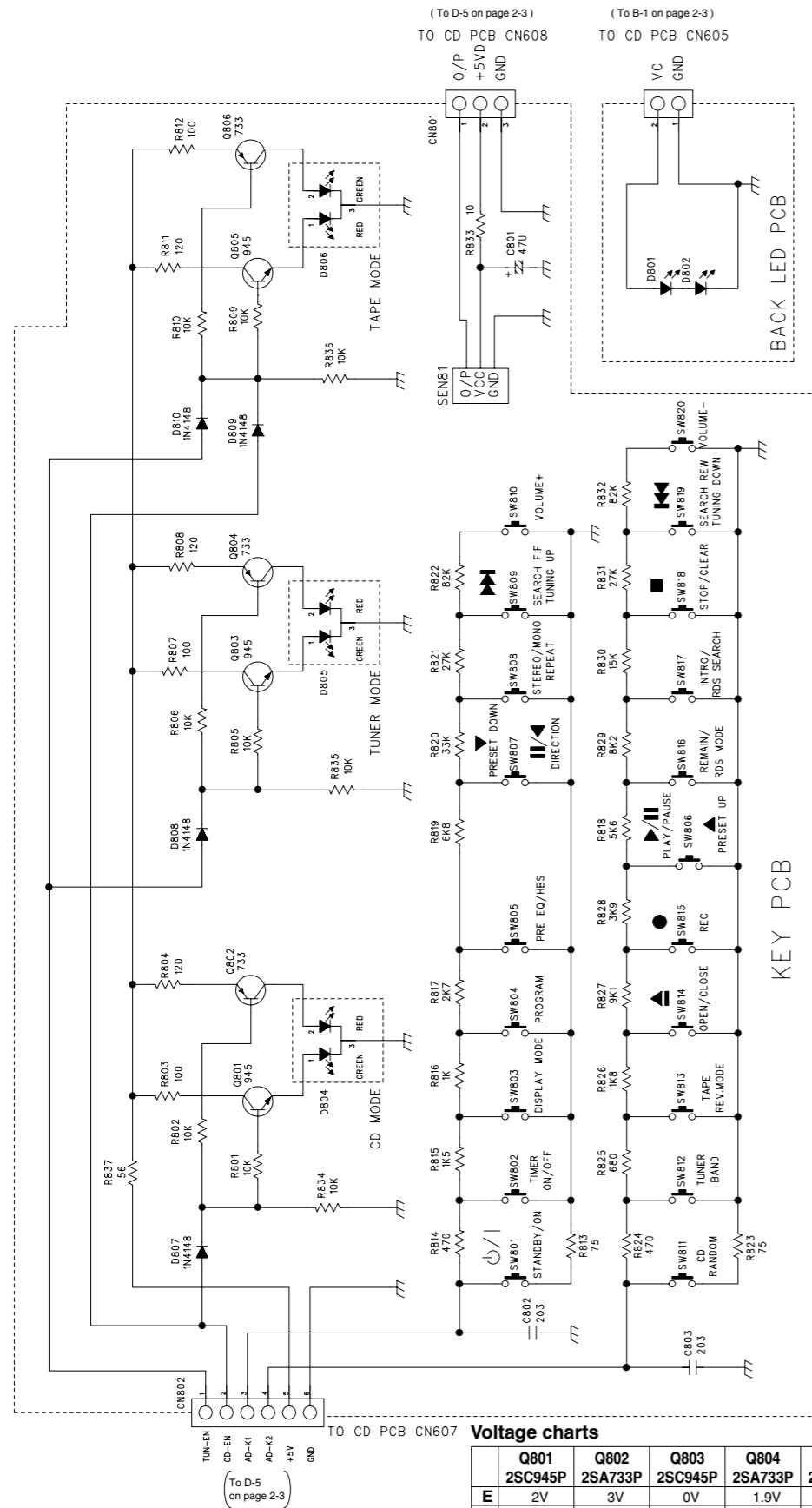
5

4

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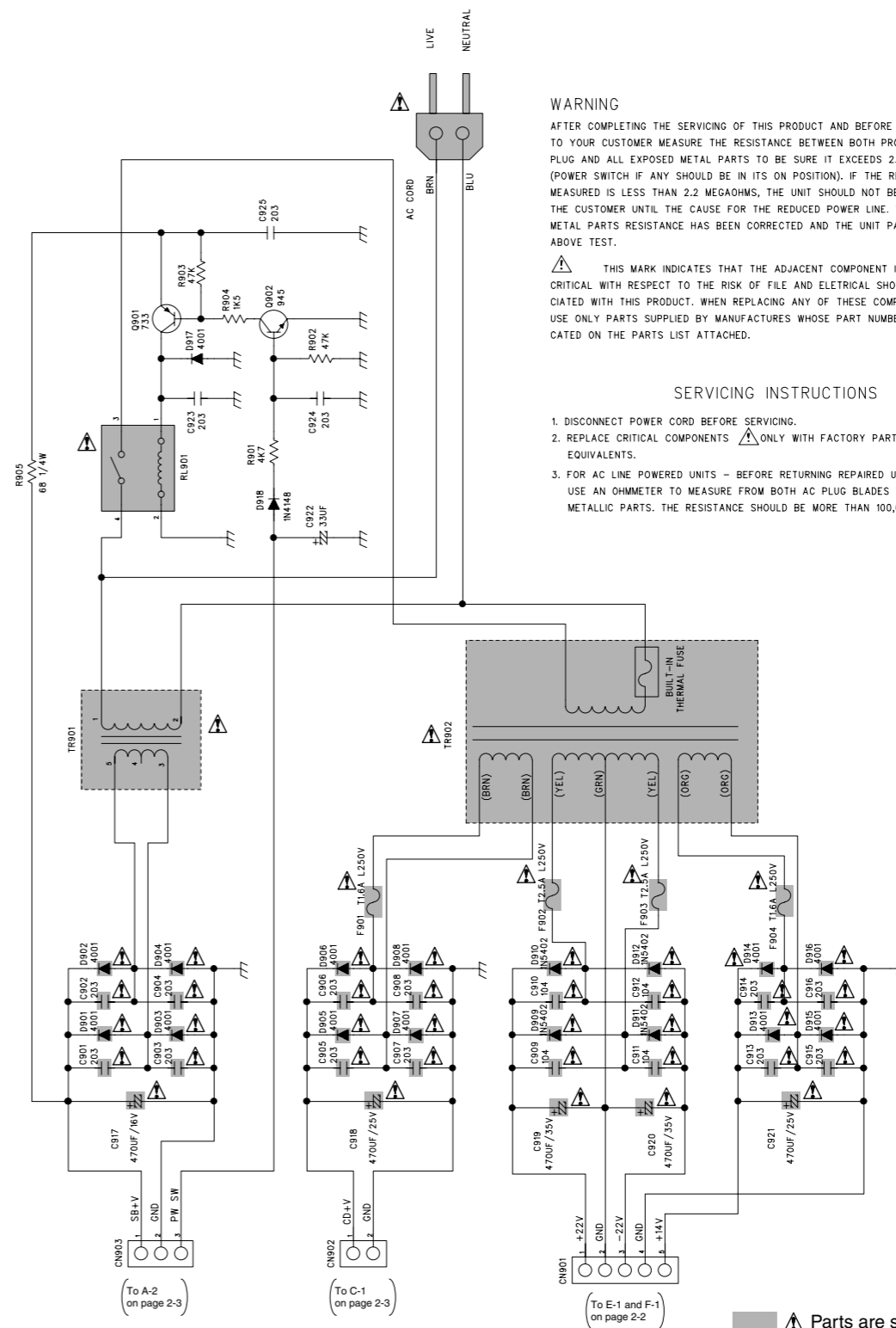
WARNING

AFTER COMPLETING THE SERVICING OF THIS PRODUCT AND BEFORE RETURNING IT TO YOUR CUSTOMER MEASURE THE RESISTANCE BETWEEN BOTH PRONGS OF THE AC PLUG AND ALL EXPOSED METAL PARTS TO BE SURE IT EXCEEDS 2.2 MEGAOHMS (POWER SWITCH IF ANY SHOULD BE IN ITS ON POSITION). IF THE RESISTANCE MEASURED IS LESS THAN 2.2 MEGAOHMS, THE UNIT SHOULD NOT BE RETURNED TO THE CUSTOMER UNTIL THE CAUSE FOR THE REDUCED POWER LINE. TO EXPOSED METAL PARTS RESISTANCE HAS BEEN CORRECTED AND THE UNIT PASSED THE ABOVE TEST.

THIS MARK INDICATES THAT THE ADJACENT COMPONENT IS CONSIDERED CRITICAL WITH RESPECT TO THE RISK OF FIRE AND ELECTRICAL SHOCK ASSOCIATED WITH THIS PRODUCT. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY PARTS SUPPLIED BY MANUFACTURERS WHOSE PART NUMBERS ARE INDICATED ON THE PARTS LIST ATTACHED.

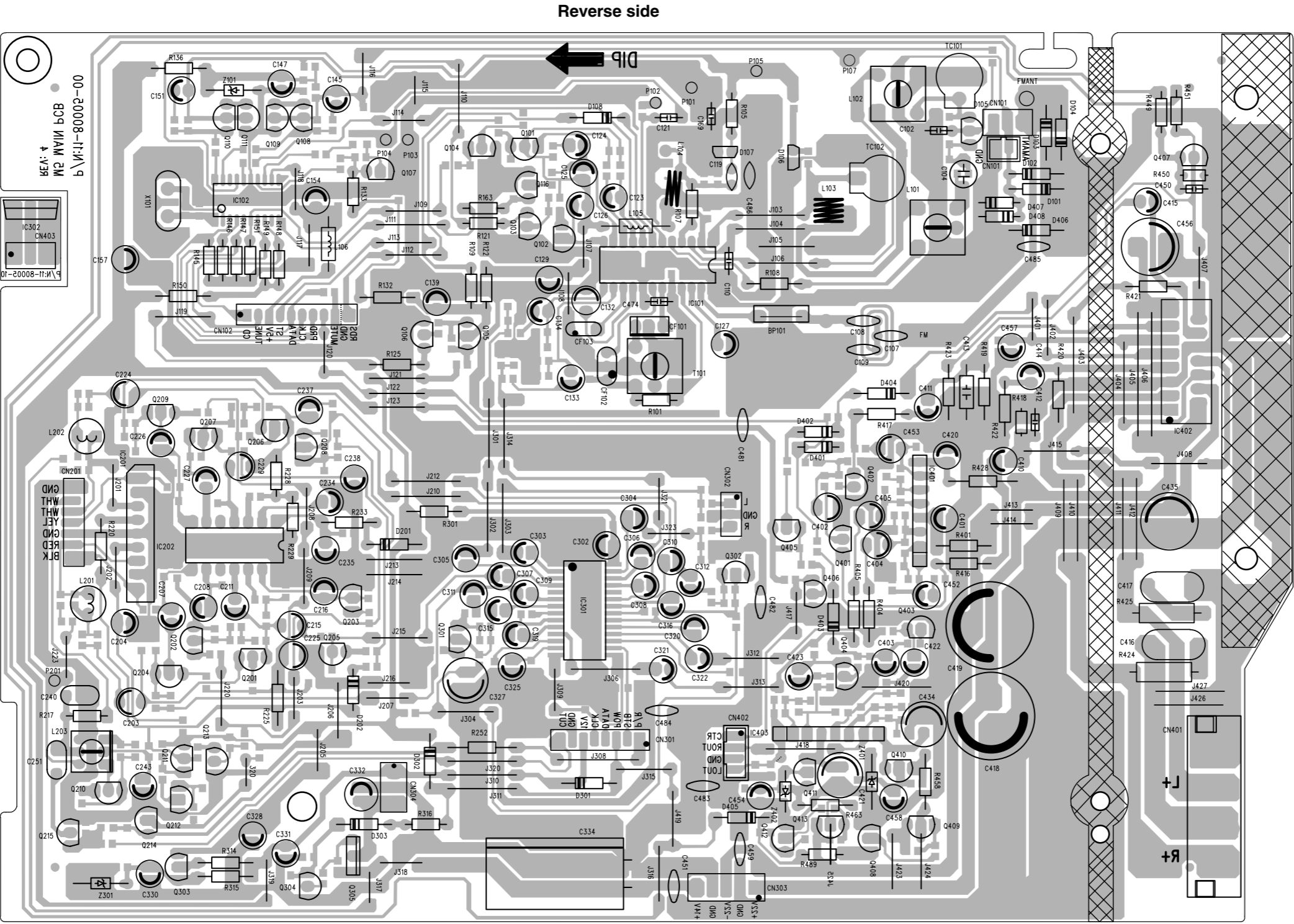
SERVICING INSTRUCTIONS

1. DISCONNECT POWER CORD BEFORE SERVICING.
2. REPLACE CRITICAL COMPONENTS ONLY WITH FACTORY PARTS OR RECOMMENDED EQUIVALENTS.
3. FOR AC LINE POWERED UNITS - BEFORE RETURNING REPAIRED UNIT TO USER, USE AN OHMMETER TO MEASURE FROM BOTH AC PLUG BLADES TO ALL EXPOSED METALLIC PARTS. THE RESISTANCE SHOULD BE MORE THAN 100,000 OHMS.



Printed circuit boards

■ Main board



A

B

C

D

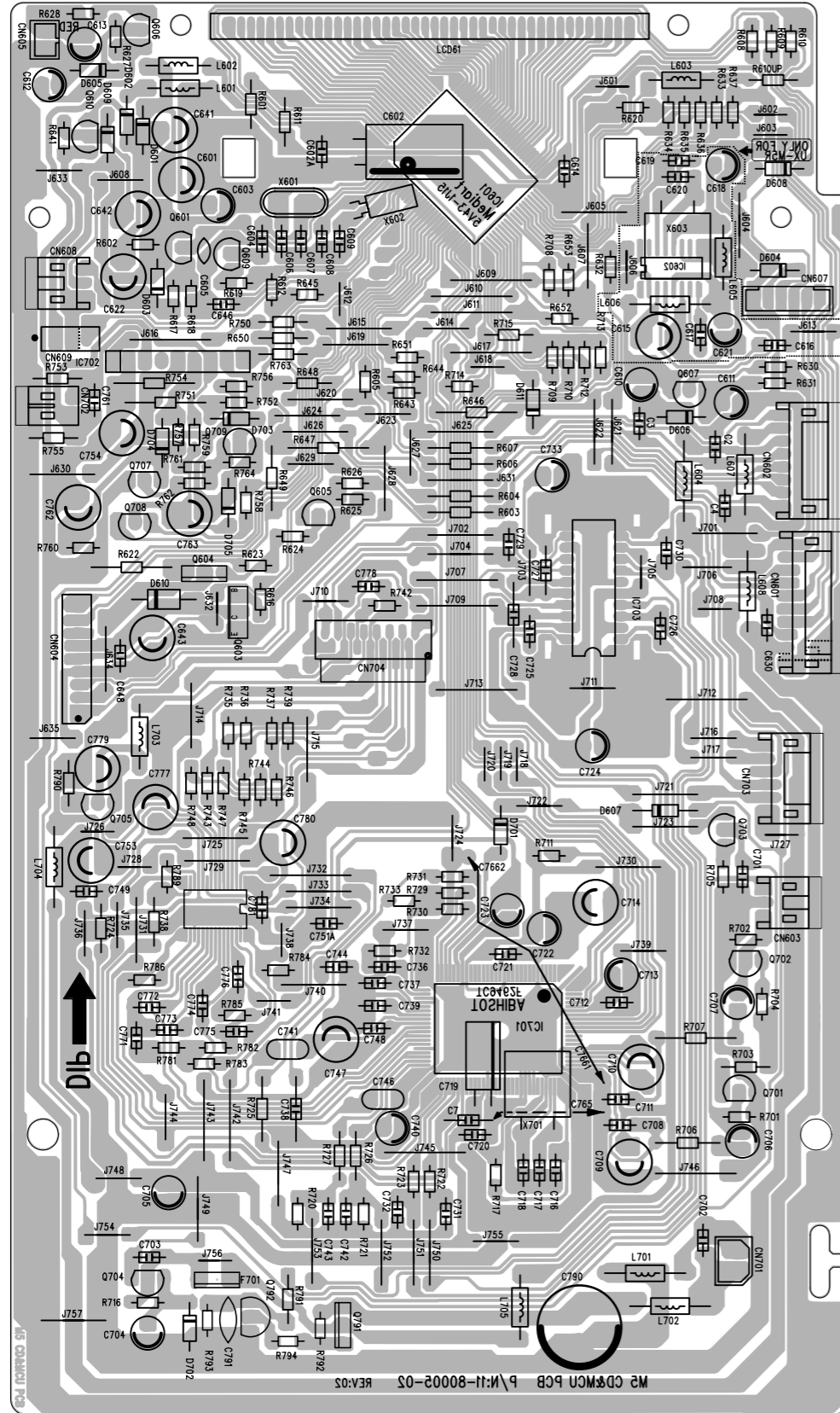
E

F

G

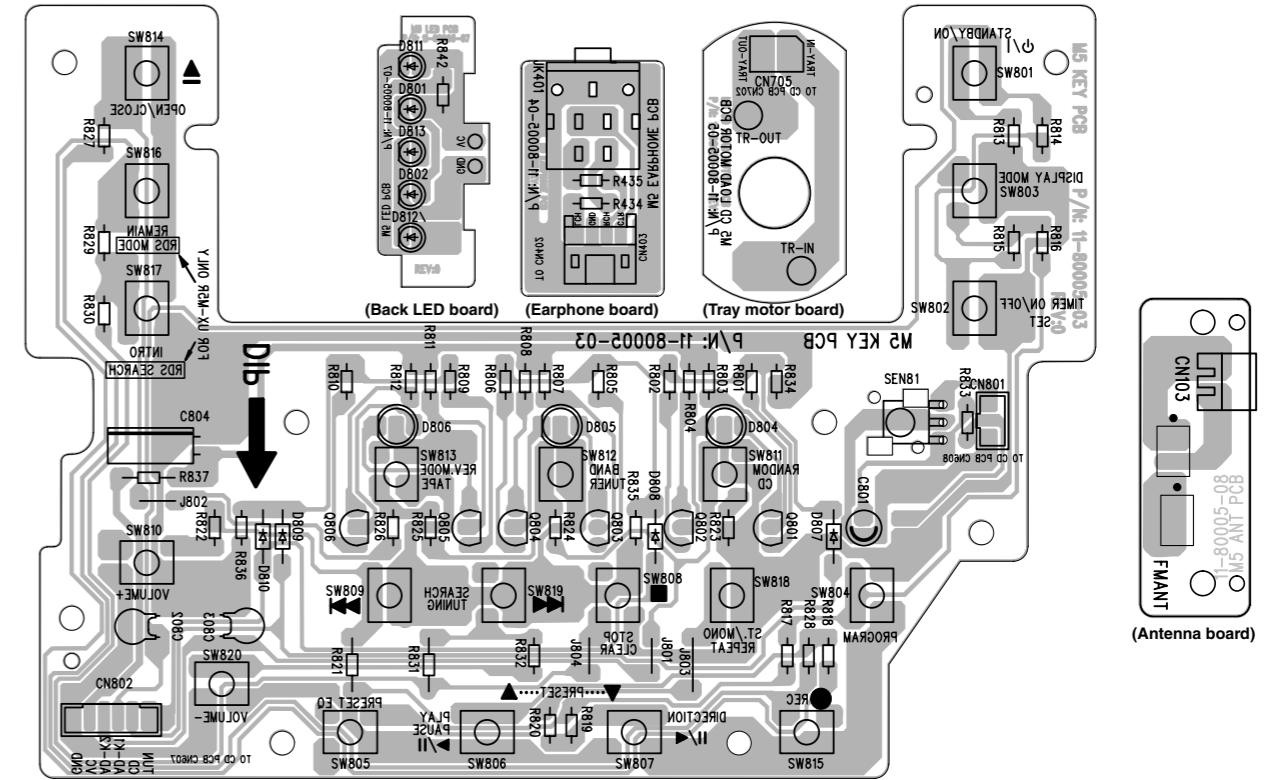
■ CD & MCU board

Reverse side



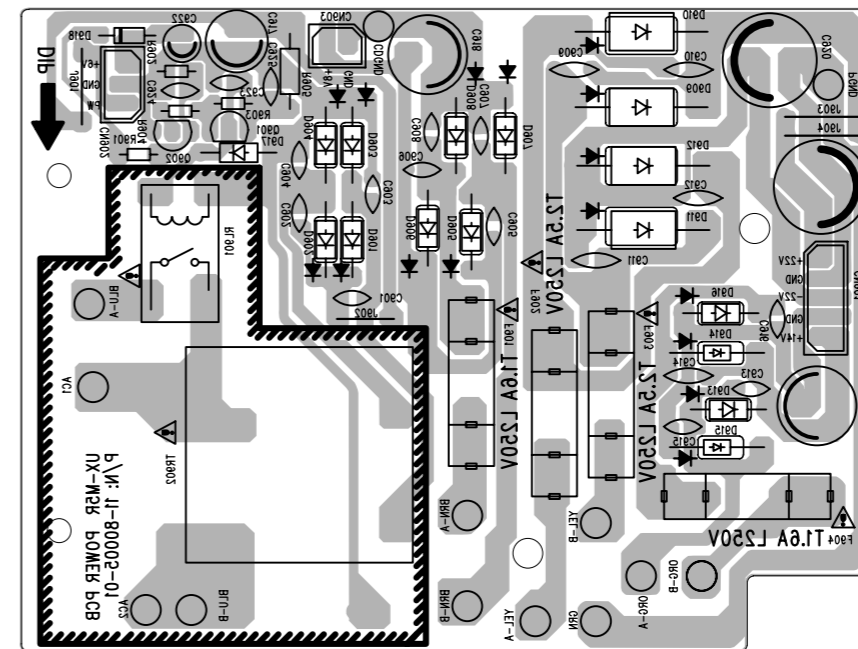
■ Key board

Reverse side



■ Power board

Reverse side



< M E M O >



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